

 Depleted Uranium Hexafluoride Conversion Project	DUF6-UDS-PLN-074 Revision 0 May 2007
---	---

Worker Safety and Health Program

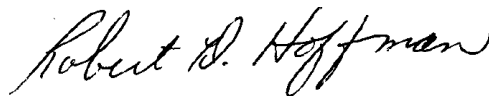
Uranium Disposition Services, LLC
Burns and Roe Enterprises, Inc.
Duratek Federal Services, Inc.
Framatome ANP, Inc.

U.S. Department of Energy
Portsmouth, Paducah Project Office
Paducah Site
Portsmouth Site

Depleted Uranium Hexafluoride Conversion Project Worker Safety and Health Program


Lead Preparer

Robert D. Hoffman, CPM
Deputy ES&H Manager - Construction


Date: 05/16/2007


Approval

Don Parker
ES&H/Security Manager


Date: 05/16/2007


Approval

Doug Adkisson
Operations Manager


Date: 05/16/2007


Approval

Ben Hill
Senior Construction Manager


Date: 05/16/2007

Approval

Steve Polston
Project Manager


Date: 05/16/2007

DISCLAIMER

This document was prepared by Uranium Disposition Services, LLC, under U. S. Department of Energy Contract DE-AC05-02OR22717, and is intended for use solely in conjunction with the Depleted Uranium Hexafluoride (DUF₆) Conversion Project. The information contained herein shall not be disclosed, duplicated, or released in whole or in part for any purpose other than the DUF₆ Conversion Project without the express written consent of the U.S. Department of Energy and Uranium Disposition Services, LLC.

**DUF₆ CONVERSION PROJECT
WORKER SAFETY AND HEALTH PROGRAM, REVISION 0**

Revision Summary

<u>TITLE:</u> Worker Safety and Health Program	<u>DOCUMENT NO:</u> DUF6-UDS-PLN-074	<u>REV:</u> 0
REVISION DESCRIPTION <ul style="list-style-type: none">Revision 0 – Initial issuance as approved by DOE.		

Table of Contents

1. INTRODUCTION	1-1
2. PROJECT SCOPE AND HISTORY	2-1
3. SAFETY AND HEALTH METHODOLOGY	3-1
3.1 Zero Accident Commitment	3-2
3.2 Safety Infraction Disciplinary Policy	3-2
3.3 Lessons Learned, Feedback, and Continuous Improvement.....	3-3
3.4 Assessments and Surveillances.....	3-3
3.5 Multi-contractor Worksites.....	3-4
3.6 Worker Safety and Health Program	3-5
4. INTEGRATED SAFETY MANAGEMENT	4-1
5. SAFETY MANAGEMENT PROGRAMS.....	5-1
6. ROLES AND RESPONSIBILITIES.....	6-1
6.1 Organizational Structure	6-1
7. HAZARD IDENTIFICATION AND ASSESSMENT	7-1
7.1 Known Chemical Hazards	7-2
7.2 Known Radiological Hazards	7-2
8. HAZARD PREVENTION AND ABATEMENT	8-1
8.1 Implementing Hazard Controls	8-2
9. SAFETY AND HEALTH STANDARDS	9-1
10. FUNCTIONAL AREAS	10-1
10.1 Construction Safety	10-1
10.2 Fire Protection.....	10-1
10.3 Explosives Safety.....	10-2
10.4 Pressure Safety	10-2
10.5 Firearms Safety	10-3
10.6 Industrial Hygiene	10-3
10.7 Biological Safety	10-4
10.8 Occupational Medicine	10-4
10.9 Motor Vehicle Safety	10-5
10.10 Electrical Safety	10-5
11. TRAINING AND INFORMATION.....	11-1
11.1 General Employee Training.....	11-1
11.2 New Hire Orientation Briefing	11-1
11.3 Hazard Communication Program and Training	11-2
11.4 Task/Hazard Specific Training	11-2
11.5 Plan of the Day Meetings.....	11-2
11.6 Other.....	11-3
12. RECORDKEEPING AND REPORTING	12-1
12.1 Hazard Inventory, Assessment, and Control Records.....	12-1
12.2 Event Notification/Communication.....	12-1
12.3 Noncompliance Reporting.....	12-2

12.4 Periodic Reporting	12-2
13.SUPPORTING INFORMATION	13-1
13.1 Requirement References	13-1
13.2 Source References	13-1
13.3 Standards Incorporated by Reference	13-3
ATTACHMENT A.....	A-1
ATTACHMENT B.....	B-1
ATTACHMENT C.....	C-1
ATTACHMENT D.....	D-1

LIST OF ACRONYMS

AHA	Activity Hazard Analysis
ALARA	As Low As Reasonable Achievable
CAIRS	Computerized Accident and Incident Reporting System
CFR	Code of Federal Regulations
CMP	Construction Management Procedure
dba	decibels on the A-weighted scale
DOE	U.S. Department Of Energy
DSA	Documented Safety Analysis
DUF ₆	Depleted Uranium Hexafluoride
EPHA	Emergency Planning Hazards Analysis
ES&H	Environmental, Safety, and Health
FP	Fire Protection
GET	General Employee Training
HAZWOPER	Hazardous Waste Operations and Emergency Response
HF	Hydrogen Fluoride
IH	Industrial Hygiene
ISMS	Integrated Safety Management System
NFPA	National Fire Protection Association
O&M	Operations and Maintenance
ORGDP	Oak Ridge Gaseous Diffusion Plant
OSHA	Occupational Safety and Health Administration
PAAA	Price-Anderson Amendments Act
PGDP	Paducah Gaseous Diffusion Plant

PL	Public Law
POC	Point Of Contact
PPPO	Portsmouth Paducah Project Office
PORTS	Portsmouth Gaseous Diffusion Plant
PPE	Personal Protective Equipment
PQAP	Project Quality Assurance Plan
SH	Safety and Health
SHP	Safety and Health Procedure
SME	Subject Matter Experts
SMP	Safety Management Program
TSR	Technical Safety Requirements
UDS	Uranium Disposition Services, LLC
USEC	United States Enrichment Corporation
USQ	Unreviewed Safety Question
VRD	Vendor Requirement Document
WSHP	Worker Safety and Health Program
WSS	Work Smart Standards

EXECUTIVE SUMMARY

Uranium Disposition Services, LLC, (UDS) has been selected by the Department of Energy (DOE) to disposition the depleted uranium hexafluoride (DUF₆) that has been stored at three sites: Paducah, Kentucky; Portsmouth, Ohio; and the East Tennessee Technology Park in Oak Ridge, Tennessee. DUF₆ is a by-product of the uranium enrichment process, which is employed to make uranium suitable for use as fuel for nuclear reactors or in other national security applications.

The primary objectives of the UDS DUF₆ Conversion Project (Project) are to design, construct, and operate conversion facilities on DOE property at the Portsmouth and Paducah sites and to assume responsibility for operation of the cylinder storage yards at these two storage sites.

These conversion facilities will convert the DOE inventory of DUF₆ now located at the Paducah Gaseous Diffusion Plant and the Portsmouth Gaseous Diffusion Plant to a stable chemical form acceptable for beneficial use/reuse and/or disposal. In addition, UDS will provide surveillance and maintenance of the DOE inventory of cylinders containing DUF₆, low-enriched uranium as uranium hexafluoride, natural assay uranium hexafluoride, empty and heel cylinders in a safe/environmentally acceptable manner.

This *Worker Safety and Health Program* establishes the framework for a 10 Code of Federal Regulations 851 (10 CFR 851), *Worker Safety and Health Program*, compliant worker safety and health program that reduces or prevents occupational injuries, illnesses, and accidental losses by providing a workplace that is free from recognized hazards that cause or have the potential to cause death or serious physical harm to employees.

This program has been prepared in accordance with the requirements identified in Contract No. DE-AC05-02OR22717 and 10 CFR 851.

Attachments to this document include the UDS ES&H Policy Statement, the implementing document matrix for construction activities, the implementing document matrix for operation and maintenance activities, and the "Crosswalk of 10 CFR 851 Requirements to the UDS Implementing Documents".

1. INTRODUCTION

This document describes the Uranium Disposition Services, LLC (UDS) worker safety and health program (WSHP) to integrate safety and health requirements into all phases of its activities; to conduct its operations in an environmentally clean manner; and to provide necessary and sufficient protection for its workers, subcontractors, visitors, vendors, and the surrounding community while fulfilling its mission to the Department of Energy (DOE) in performance of contracted work on the Depleted Uranium Hexafluoride (DUF₆) Conversion Project (Project). The WSHP describes the integrated safety management system and the safety and health management systems employed to ensure that applicable standards and criteria are identified, communicated, and implemented, and that assessments of safety and health programs are conducted and identified deficiencies are corrected to ensure worker safety and health.

The objective of this document is to describe a WSHP that will assure a workplace that is free from recognized hazards that cause or are likely to cause death, injury, or damage to the environment at the DUF₆ Conversion Project sites.

UDS management believes that all accidents are preventable and has a commitment to “Zero Accident” performance and “Safety First” culture.

This WSHP will be updated whenever a significant change or addition to the program is made. As a minimum, the ES&H/Security manager will annually conduct a review to ensure this document remains current and continues to address identified controls, changes, conditions, or workplace safety and health standards directed by DOE consistent with the requirements of 10 CFR 851 and DEAR 970.5204–2, Laws, Regulations and DOE Directives (December 2000) and associated contract clauses are incorporated. Documentation of this review will be either in the form of a letter to the DOE Portsmouth Paducah Project Office (PPPO) stating that the document was reviewed and no changes were required or a revised version of the WSHP will be submitted to the DOE PPPO for review and approval in accordance with 10 CFR 851.

END OF SECTION

2. PROJECT SCOPE AND HISTORY

The mission of the DUF₆ Conversion Project is to provide for the conversion of the DOE inventory of DUF₆ to a more stable chemical form suitable for beneficial use or disposal. The project objectives include meeting the requirements of Public Law (PL) 105-204 and PL 107-206 to convert the DUF₆ to a stable chemical form through the design, construction, and operation of two conversion facilities (one near Paducah, Kentucky, and one near Portsmouth, Ohio).

- Design two DUF₆ conversion facilities
- Construct two DUF₆ conversion facilities (one near Portsmouth, Ohio and one near Paducah, Kentucky)
- Operate DUF₆ conversion facilities (one near Portsmouth, Ohio and one near Paducah, Kentucky) for a fixed period of time
- Conduct DOE Cylinder Surveillance and Maintenance for the period of contract at the DOE facilities located near Portsmouth, Ohio and Paducah, Kentucky.
- Contract #DE-AC05-02OR22717 was awarded on August 29, 2002 and design of the facilities started soon thereafter.
- As mandated by Congress in PL 107-206, construction of the Paducah and Portsmouth facilities began prior to July 31, 2004, and is currently scheduled to complete in the fourth quarter of 2007.
- In July 2005, UDS began the surveillance and maintenance activities of the cylinder storage yards at both sites with full operations and maintenance of both conversion facilities scheduled to begin in 2008.

The DUF₆ Conversion Project will convert DOE's existing DUF₆ inventory, consisting of approximately 700,000 metric tons (MT) contained in about 63,300 cylinders currently located at the Paducah and Portsmouth Gaseous Diffusion plants to a more stable form, (uranium oxide, predominantly U₃O₈).

Approximately 37,000 of these cylinders are located at the Paducah Plant Site with the remaining located at the Portsmouth Plant Site. The scope of the project includes the design, construction, and operations and maintenance of the conversion facilities and surveillance and maintenance of cylinder yard operations. Cylinder yard operations includes management of DOE's inventory of DUF₆, low-enriched uranium (LEU) hexafluoride (UF₆), natural assay UF₆, and heel and empty cylinders and the maintenance of inventory records. The estimated duration of the conversion project is 25 years at the Paducah Plant Site and 18 years at the Portsmouth Plant Site.

The selected process is the UDS dry conversion method. The method incorporates a continuous process in which DUF₆ is vaporized and converted to uranium oxide in a fluidized bed conversion unit. The resulting powder is collected and packaged for disposition. The process equipment is arranged in parallel lines, each line consisting of two autoclaves, two conversion units, a hydrogen fluoride (HF) recovery system, and

process off-gas scrubbers. Equipment will also be installed to collect the HF byproduct for sale as a marketable product. The emptied cylinders are stabilized to reduce the un-neutralized fluorides and aged to reduce the Th-234 activity to meet as low as reasonable achievable (ALARA) requirements. The emptied 48" diameter cylinders, and/or CV12 cylinders will have flanges attached to them and if found acceptable for use as a waste container, they then will be used as shipping containers for the uranium oxide.

Smaller or unacceptable cylinders will be sent to disposal at an approved off-site waste disposal site.

END OF SECTION

3. SAFETY AND HEALTH METHODOLOGY

This WSHP addresses the safety and health requirements identified in Contract No. DE-AC05-02OR22717, 10 CFR 851 *Worker Safety and Health Program*, and DUF6-G-RGN-006, *Work Smart Standards Final Report*. To satisfy these requirements the WSHP utilizes components identified in 10 CFR 830 *Nuclear Safety Management*, Subpart A - *Quality Assurance Requirements*; and 48 CFR 970.5223-1, *Integration of environment, safety, and health into work planning and execution*.

Key to implementation of the WSHP is the understanding that this is an integrated document that includes construction, the cylinder storage yards, conversion facilities, and operations and maintenance (O&M) activities. The WSHP for construction activities are implemented primarily through the documents identified in DUF6-UDS-PLN-003, *Project Quality Assurance Plan (PQAP)*; DUF6-UDS-PLN-006, *Integrated Safety Management System for Design and Construction*; DUF6-UDS-PLN-013, *Construction Management Plan*; and DUF6-UDS-PLN-041, *Environmental, Safety, and Health Plan for Construction*. The WSHP for operations and maintenance activities are or will be implemented primarily through the documents identified in DUF6-UDS-PLN-003, *Project Quality Assurance Plan (PQAP)*; DUF6-UDS-PLN-011, *Cylinder Surveillance and Maintenance Plan*; DUF6-UDS-PLN-014, *Conversion Facilities O&M Plan*; DUF6-UDS-PLN-037, *Safety Management Program Descriptions for the UDS DUF6 Conversion Project*; and DUF6-UDS-PLN-040, *Integrated Safety Management System for Operations*.

This WSHP incorporates a graded approach based upon the severity of the hazards associated with the Project scope of work and risk. The WSHP includes relevant information concerning scope of work, site hazards, and appropriate company level plans and procedures. Where necessary, a hazard specific plan may also be required by regulation to address more specific work activities or subcontracted work. In all cases, the elements of this program shall be flowed down to the lowest subtier contractor via their subcontracts to assure consistency/applicability.

The Integrated Safety Management System (ISMS) process is a key element to the implementation of the WSHP. UDS has developed two ISMS plans in accordance with 48 CFR 970.5223-1, *Integration of environment, safety, and health into work planning and execution* – one for the design and construction phases and one for the O&M phase. DUF6-UDS-PLN-006, *Integrated Safety Management System for Design and Construction* is the document utilized for design and construction and DUF6-UDS-PLN-040, *Integrated Safety Management System for Operations* is utilized for O&M. These documents are further discussed in Section 4.

UDS has also developed a safety management program, DUF6-UDS-PLN-037, *Safety Management Program Descriptions for the UDS DUF6 Conversion Project*, in accordance with DOE-STD-3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analysis*. This document is further discussed in Section 5.

The WSHP and its implementing documents provide a consistent approach to ensure that applicable requirements are identified and implemented in project documents, that hazards are identified and appropriately mitigated, and that trained and qualified personnel are utilized to perform the specific work tasks.

Engineering controls shall be used whenever practicable to control worker exposures to hazards. Engineering controls, in conjunction with administrative controls and supplemented by personal protective equipment (PPE), as necessary, will be implemented as the primary means to control worker exposures. Work controls will be established based on the process as defined in *Work Control Process*, UDS-U-GFP-0108, for O&M work activities; and *Work Coordination and Hazard Control*, UDS-VRD-101, for construction work activities.

All persons performing work activities at the Project sites (including employees, subcontractors, unescorted visitors, and vendors) are subject to the requirements of this WSHP and will be held responsible for adhering to the requirements, as applicable, and as specified herein. Each individual is responsible for bringing to the attention of management or their point-of-contact (POC) any unsafe or unhealthy conditions/actions that he/she observes.

This WSHP and its implementing documents, when identified in subcontract documents, eliminates the requirements for individual subcontractor WSHP or ISMS plans, which would otherwise be required for individual subcontractors. Applicable vendor requirement documents (VRD), construction management procedures (CMP), and safety and health procedures (SHP) are flowed down to a highly variable and transitional subcontractor work force and provide the necessary requirements to interface adequately with the approved UDS procedures. As with DUF6-UDS-PLN-041, Environmental Safety, and Health Plan for Construction, subcontractors will have the capability to accept the WSHP or submit their own plan for UDS review and approval.

3.1 Zero Accident Commitment

The UDS commitment to Zero Accidents is part of the UDS “Safety First” culture.” This culture focuses not only on just decreasing accidents but also on eliminating them altogether. UDS’s Zero Accident commitment adheres to the premise that all accidents are preventable. UDS’s Zero Accident commitment starts at the top of the organization with the Board of Governors and the president and permeates the entire organization. The UDS commitment is to create a safe working environment that empowers employees to “take charge” of their own safety and to prevent unsafe conditions/actions prior to their development.

3.2 Safety Infraction Disciplinary Policy

As stated in Section 14 of UDS-HRP-001, *Human Resources Policy Manual*, UDS believes in a progressive discipline approach to ensure equitable and consistent discipline for unsatisfactory conduct in the workplace. The best disciplinary measure is the one that does not have to be enforced and comes from effective leadership and fair

supervision at all employment levels. UDS's own best interest lies in ensuring fair treatment of all employees and in making certain that disciplinary actions are prompt, uniform, and impartial. The major purpose of any disciplinary action is to correct the problem, prevent recurrence, and prepare the employee for satisfactory service in the future.

3.3 Lessons Learned, Feedback, and Continuous Improvement

Lessons learned determined to be pertinent to a given scope of work will be reviewed with workers. Lessons learned will be covered in the initial pre-work session and will be discussed as topics for pre-job briefings and toolbox meetings as applicable. Workers will be encouraged to interact with shared personal experiences during these reviews. Lessons learned will be generated, utilized, and reviewed in accordance with *Lessons Learned*, UDS-U-QAP-0017.

UDS utilizes a variety of feedback and continuous improvement methods to evaluate, on an ongoing basis, the adequacy, and effectiveness of the ISMS process and to assure continuous improvement. Data is collected at the program (company) and task levels.

Feedback and improvement processes may include DOE oversight; regulatory oversight; management and independent assessments; tests and evaluations; QA functions; worker involvement; safety meetings; trend analysis; operational experience, and lessons learned. Specific processes for these feedback and improvement mechanisms are detailed in the appropriate QA procedures.

Additionally, all employees are empowered to express concerns and provide feedback to managers and supervisors. This empowerment encourages (1) new avenues for continuous improvement in the workplace and (2) safety incentives to identify improvement opportunities and effect changes to maintain and improve workplace safety.

As appropriate, ISMS performance matrices (safety indicators) are developed and the resulting data reported monthly to DOE. Safety performance measures will be tracked/trended for the entire project. Safety performance measures for the O&M phase are defined below.

To support continuous improvement a periodic review of internal and external sources including assessments, nonconformance reports, lessons learned (both complex wide and internally), Price-Anderson Amendment Act and occurrence reports will be performed and any applicable information will be provided to appropriate company personnel.

3.4 Assessments and Surveillances

Periodic assessments and surveillances are performed in accordance with UDS-QAP-U-0012, *Independent Assessments*; UDS-U-QAP-0013, *Management Assessments*;

UDS-SHP-103, *Safety Surveillances*, and UDS-VRD-105, *Safety Surveillances*, to ensure that a safe work environment is provided in compliance with applicable plans and procedures.

A GAP analysis was completed and serves as the baseline assessment for implementation of this WSHP.

3.5 Multi-contractor Worksites

Multiple contractors at a covered workplace are required by 10 CFR 851 to coordinate with each other to establish clear roles, responsibilities, and procedures to assure the safety and health of workers at multi-contractor workplaces. UDS will coordinate with other DOE prime contractors and with the United States Enrichment Corporation (USEC) at each work site to ensure that clear roles, responsibilities, and procedures are established. Section H-27, Site Services, of DOE Contract No. DE-AC05-02OR22717 identifies the requirements where other entities may be conducting various activities at the DOE sites.

DOE has a "Lease Agreement" with USEC that includes provisions for USEC to provide certain services such as emergency management, infrastructure, and physical security for DOE contractors at both the PGDP and the PORTS. In order to implement the services called for in the lease, task orders and work authorizations have been developed with USEC that specify the scope of work for services such as emergency services and physical security. UDS ensures that the specified scope meets the requirements of DOE regulations and directives. UDS personnel are trained to interface with USEC personnel in the performance of these services and UDS procedures implement these interface points as appropriate.

The Lease Agreement also divides the sites into "leased" areas and "non-leased" areas and clearly delineates which areas of the site fall into each category. The Lease Agreement is augmented by an additional agreement entitled "USEC and DOE Resolution of Shared Site issues at the Gaseous Diffusion Sites" dated January 24, 1996, often referred to as the "Shared Site Agreement." This document provides further guidance on shared site issues. It includes the provision that work conducted within the leased facilities will be conducted according to USEC procedures and processes and that work conducted within non-leased areas would conform to DOE (and by association, DOE contractors') procedures and processes. USEC's processes for ensuring worker safety are not identical to those implemented by DOE or their contractors, and therefore the aforementioned agreements clearly delineate which set of rules apply in which circumstances. If USEC performs work within the non-leased areas of the site, their personnel are trained on UDS procedures prior to performance of the work.

UDS may interface with other prime contractors performing work activities such as infrastructure maintenance not subject to the USEC-DOE shared site agreement, remediation activities, or other services. This work is provided by the other prime contractor in accordance with their contract with DOE. While performing these tasks each prime contractor will utilize their own procedures and work control processes if the

activity will be done in their facility. Work in UDS controlled facilities will be subject to UDS work control processes. UDS will develop work packages or procedures for the work, or review and approve the work packages, procedures, or processes used by another contractor unless otherwise directed by DOE.

UDS may also choose to subcontract to other DOE prime contractors at each site to perform a specified scope of work. For the most part this will include services, such as maintenance, dosimetry, or laboratory services. In each case, a subcontract agreement will be established. Work in UDS controlled facilities will be subject to UDS work control processes. UDS will develop work packages or procedures for the work, or review and approve the work packages or procedures used by the other contractor.

Given the complexity of working with other contractors and subcontractors on the sites, if UDS workers are exposed to a hazard, UDS will promptly correct the hazard if UDS has the authority to do so or remove UDS workers from the exposure in a timely manner, adequately protect our employees and promptly notify the contractor having the responsibility to correct the hazard.

UDS will contact senior management of any affected contractor when an event occurs that may affect their operations. A verbal notification will be made followed by a copy of an Initial Event Report form in accordance with UDS-U-QAP-0029, *Initial Event Notification*.

3.6 Worker Safety and Health Program

3.6.1 Management Responsibilities

3.6.1.1 Place of Employment Free of Recognized Hazards

The 10 CFR 851, *Worker Safety and Health Program* requires UDS and UDS subcontractors and lower-tier subcontractors, to provide a place of employment that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers. This provision is addressed through this program and the UDS ES&H Policy. As part of the Policy, UDS has adopted the following two basic principles:

- All accidents, injuries, and occupational illnesses are preventable.
- If a work task cannot be done safely, we will not do it.

3.6.1.2 Policies, Goals, and Objectives

UDS strives to fulfill the commitment to provide a safe and healthful workplace to its employees, and subcontractors through the establishment of a project-wide ES&H policy. This policy serves as the guiding principles that provide overall direction for the company concerning worker protection, and the creation, measurement, and refinement of goals and objectives that contribute to the continuous improvement of worker safety and health. The UDS ES&H policy establishes high-level commitments to worker safety

and health on the DUF₆ Conversion Project. The ES&H commitments set forth in this WSHP are put into practice through the establishment of requirements identified in the Work Smart Standards (WSS) set.

3.6.1.3 Integrated Safety Management System

The UDS approach to integrating environment, safety, health, and quality requirements into the processes for planning and conducting work on the DUF₆ Conversion Project is conveyed in DUF6-UDS-PLN-006, *Integrated Safety Management System Plan for Design and Construction*, and DUF6-UDS-PLN-040, *Integrated Safety Management System Plan for Operations*. See Section 4 for additional information.

3.6.1.4 Qualified Worker Protection Staff

UDS seeks to attract, hire, develop, and retain the most qualified worker protection professionals to assist management and line organizations in meeting worker safety and health goals and objectives. The hiring of certified professionals and management is one way that UDS ensures the quality of the WSHP. UDS employs highly qualified certified professionals. Other staff that have credentials in hazardous material management, training, transportation, and other disciplines are also available to support the Worker Safety and Health Program.

Although not all staff members who support the Worker Safety and Health Program have professional society certifications, all have been selected for their knowledge, experience, and ability to provide first-class safety and health support to the Project.

All UDS personnel are hired in accordance with Section 2.2 (*Recruitment and Hiring*) of UDS-HRP-001, *Human Resources Policy Manual*, and Section 5 of UDS-U-TRN-0001, *Training and Qualification*.

Subcontractors shall designate in accordance with appropriate contract documents qualified personnel, competent personnel, or other subject matter experts to perform functions as required by the contracted work scope.

3.6.1.5 Accountability

UDS subscribes to the philosophy that line management is responsible for safety. However, it is clear that management needs support when implementing the WSHP. UDS holds management, staff, and subcontractors accountable for worker safety and health and each has a significant role in implementing this program. It is UDS's expectation that employees and subcontractors will follow the requirements set forth in the WSS set and use specified work controls to prevent occupational injury and illness. UDS holds employees accountable for adherence to worker safety and health requirements including properly using PPE. Management communicates expectations of individual roles and responsibilities through new hire orientation and review of work

control documents. These expectations form the basis of employee goals and performance evaluations.

Section 10.1 of UDS-HRP-001, Human Resources Policy Manual, establishes the expectations each employee and his or her supervisor to form an understanding regarding performance expectations, based on the employee's roles and responsibilities. Roles define the functions that individuals play in the organization. Responsibilities describe the obligation to ensure initiation and/or implementation and/or completion of an activity. Accountabilities state that personnel will be held answerable to a specific position/individual for fulfilling a responsibility for which they have authority to act. See Section 6 for additional information concerning roles and responsibilities as they pertain to the WSHP.

The performance appraisals communicate management and staff responsibilities for safety. However, it is recognized that technical expertise in H&S disciplines such as industrial hygiene, fire protection, and occupational safety is required to achieve excellent performance. For that reason, qualified H&S professionals support line management in work planning and verify that work is performed safely, and other H&S professionals provide independent overview of UDS operations. Each organization performing potentially hazardous work has "field-deployed" H&S staff assigned to support operations. This staff is available to help with project planning, address questions or concerns raised by managers or staff, and help in the performance of management self-assessments. Similarly, worker protection performance goals and objectives for subcontractors are established and contained in contract documents. Subcontractors are held accountable for worker protection performance through contract provisions that include the option to remove subcontractor's employees or termination of the subcontract.

3.6.1.6 Worker Involvement

Worker involvement is a key component to a successful WSHP. UDS has identified "worker involvement" as the eighth guiding ISMS principle. Worker involvement, as applicable, occurs for each phase of the Project on an ongoing basis.

Empowerment of all employees, including subcontractors, is the cornerstone for the success of the Project. Employee recognition and acceptance of the philosophy for empowerment is facilitated through management approaches and written procedures that include employee incentive programs.

DUF6-UDS-PLN-006, *Integrated Safety Management System for Design and Construction*, and DUF6-UDS-PLN-040, *Integrated Safety Management System for Operations*, identify worker involvement as the eighth guiding principle. UDS-SHP-101, *Safety Concerns*; UDS-U-SHP-0211, *Hazards Assessment*; UDS-VRD-101, *Work Coordination and Hazard Control*; and UDS-VRD-103, *Safety Concerns*, are examples of documents that require worker involvement.

UDS utilizes plan-of-the-days as identified in UDS-U-SHP-0211, *Hazards Assessment*, and UDS-VRD-101, *Work Coordination and Hazard Control*, to provide a mechanism to involve workers in the development of the worker safety and health program goals, objectives, and performance measures and in the identification and control of hazards in the workplace. Workers are guaranteed the right to participate in worker protection activities on official time.

3.6.1.7 Labor Organizations

UDS has provided the affected labor organizations a copy of the draft WSHP. UDS will also provide a DOE approved copy, as well as future updates, of the WSHP to the affected labor organizations and make copies available through Documentum to all employees.

Upon timely request from an affected labor organization, UDS will bargain concerning implementation of 10 CFR 851, consistent with the Federal labor laws.

3.6.1.8 Report Events, Hazards, and Concerns

Workers are encouraged to report, without reprisal, job-related injuries and illnesses, incidents, hazards, and concerns. Workers are encouraged to make recommendations about appropriate ways to control hazards. As a core function of the UDS ISMS Programs, the feedback and improvement processes emphasize assessments and feedback on the adequacy of controls and the continual improvement of the programs and processes that form ISM.

Workers have the right to express concerns related to worker safety and health. The UDS commitment to promoting open communication among all staff (employees and non-employees) and to ensuring the prompt identification, reporting, and resolution of concerns is embodied UDS-SHP-101, *Safety Concerns*, and UDS-VRD-103, *Safety Concerns*. UDS-SHP-101 establishes the reporting mechanism for UDS employees. UDS-VRD-103 establishes the reporting requirements for subcontractors. Both documents provide a method to report concerns with anonymity and workers' right to report safety matters without reprisal is guaranteed. UDS will not tolerate retaliation. UDS encourages and even expects employees to raise concerns. Employees are encouraged to work within their line organizations toward resolving concerns.

In addition to the mechanisms provided through the UDS safety concerns documents, workers who believe they are being denied the rights to report events, hazards and/or concerns or who believe they are subject to reprisals for attempting to exercise these rights may file an employee concern using DOE O 442.1A, "Department of Energy Employee Concerns Program". Workers are notified of this right to file a concern with DOE through training and the prominent display of the DOE Worker Protection Poster.

3.6.1.9 Regular Communications

UDS is committed to objectively and fully communicating health and safety information to staff, subcontractor personnel, our customers, applicable stakeholders, and the public. Communications about workplace safety and health issues are an important aspect of the WSHP. Plan-of-the-day meetings, semi-annual safety luncheons, and monthly reports are utilized to communicate S&H information to employees. In addition, when the conversion facilities are in operation a safety committee will be established to enhance employee communication.

3.6.1.10 Stop Work Authority

In accordance with UDS-QAP-022, *Stop Work*, and UDS-VRD-104, *Suspension of Work*, all employees, subcontractors, visitors, and vendors have suspend/stop-work authority.

All personnel have the right and responsibility to “Suspend/Stop Work” if they believe that a situation presents “imminent danger” to themselves, a fellow worker, and/or the environment. Personnel who exercise this right do so without fear of reprisal.

3.6.1.11 Inform Workers of Rights

Workers are informed of their safety and health rights and responsibilities through multiple means including training, safety and health information links provided at the UDS Homepage, Roles and Responsibilities identified in performance appraisals, and the posting of the DOE-designed Worker Protection Poster in the workplace where it is accessible to all workers.

3.6.2 Workers Rights and Responsibilities

Workers must comply with the requirements of this part, including the worker safety and health program, which are applicable to their own actions and conduct. Workers at a covered workplace have the right, without reprisal, to the following:

3.6.2.1 Participate in Activities

UDS is committed to continuous improvement in gaining participation and engagement of all staff. For a detailed discussion of the efforts, see section 3.6.1.6, *Worker Involvement*.

3.6.2.2 Access to Information

UDS is committed to communicating, objectively and effectively, worker safety and health information. Documentum is open to any worker that has a need for the

information. All employees have access to Documentum and WSHP information maintained by the ES&H Department.

Ensuring worker access to information relevant to the worker safety and health program is recognized as a critical management responsibility.

UDS guarantees that workers have the right of access to:

1. DOE safety and health publications
2. The worker safety and health program
3. The standards, controls, and procedures applicable to the covered workplace
4. The safety and health poster that informs the worker of relevant rights and Responsibilities
5. Limited information on any recordkeeping log (OSHA Form 300).
6. The DOE Form 5484.3 (equivalent to OSHA Form 301) that contains the employee's name as the injured or ill worker

Authorized representatives may accompany DOE officials assigned to investigate the nature and extent of compliance with worker health and safety requirements. Workers have the right to request and receive results of inspections and accident investigations.

3.6.2.3 Notified when Monitoring Indicates Overexposure

Workers are notified of the results of all monitoring including when monitoring results indicate a worker may have been overexposed to hazardous materials. This is specifically implemented through UDS-U-SHP-0505, *Exposure Assessments*, and UDS-VRD-504, *Exposure Assessments*.

3.6.2.4 Observe Monitoring

Employees and subcontractors have the opportunity to observe monitoring or measuring of hazardous materials and have the results of their own exposure monitoring. This is specifically implemented through UDS-U-SHP-0505, *Exposure Assessments*, and UDS-VRD-504, *Exposure Assessments*.

3.6.2.5 Representative Accompany Physical Inspection

During any physical inspection conducted by the DOE Director, Office of Price Anderson Amendment Enforcement, an employee representative is notified of the inspection and is open to participate and to accompany the inspection team.

3.6.2.6 Request and Receive Results of Inspections and Investigations

UDS employees can request and receive the results of inspections and investigations. Employees may contact their manager, supervisor, the ES&H Department, or the quality assurance department to obtain such information.

3.6.2.7 Express Concerns Related to Worker Safety & Health

UDS is committed to resolving concerns related to Worker Safety and Health in a timely manner. The programs available to employees are defined in detail in Section 3.6.1.8, *Report Events, Hazards, and Concerns*.

3.6.2.8 Decline to Perform Assigned Task Based on Risk

All workers have Stop Work Authority. The programs available to employees are defined in detail in Section 3.6.1.10, *Stop Work Authority*.

3.6.2.9 Request for Investigation or Inspection

Any worker or worker representative may request that the Director, Office of Price Anderson Amendment Enforcement, initiate an investigation or inspection pertaining to worker safety issues.

3.6.3 Compliance Order

If the Secretary of Energy were to issue a Compliance Order to UDS in accordance with 10 CFR 851.4, UDS would review the order and immediately take appropriate mitigative actions.

UDS will review the Order and, as allowed by statute, within 15 calendar days of the issuance of the Compliance Order, may request that the Order be rescinded or modified. UDS understands that a request to rescind or modify does not stay the effectiveness of the Compliance Order unless the Secretary of Energy issues an order to that effect.

A copy of the Compliance Order will be prominently posted, once issued, at or near the location where the violation, potential violation, or inconsistency occurred until it is corrected.

END OF SECTION

4. INTEGRATED SAFETY MANAGEMENT

The ISMS is a key component to the implementation of the WSHP. UDS has established and maintains a safety and health management system founded on the principles of ISMS that promotes the company's core values and the principles set forth by the DOE. The principles and functions of the ISMS are used to achieve systematic integration of ES&H protection into management and work practices at all levels of work. The direct involvement of both the workers who perform the work and management who directs the work begins at the planning stage, continues through the completion of activities, and is critical to the successful development and implementation of ISMS. The ISMS is applicable and mandatory for all work performed under the UDS contract whether the work is self-performed or subcontracted.

UDS is committed to establishing a work culture that comprises the elements advocated by the DOE in the principles and functions of the ISMS. UDS and its subcontractors will implement the ISMS core values and principles by ensuring ES&H issues that affect our workers and subcontractors, the public, and/or the environment are our primary concern when planning and fulfilling project tasks.

Design and construction activities are governed by DUF6-UDS-PLN-006, *Integrated Safety Management System Plan for Design and Construction*, identifies the ISMS process.

Cylinder storage yard surveillance and maintenance activities, and conversion facility operations and maintenance activities are/will be governed by DUF6-UDS-PLN-040, *Integrated Safety Management System Plan for Operations*.

The ISMS five core functions and eight guiding principles identified in DUF6-UDS-PLN-006, *Integrated Safety Management System Plan for Design and Construction*, and DUF6-UDS-PLN-040, *Integrated Safety Management System Plan for Operations*, are applicable to UDS, its member organizations, all subcontractor organizations, and their subtiers while performing work in conjunction with the Project. These five core functions and eight guiding principles as identified in DUF6-UDS-PLN-006 and DUF6-UDS-PLN-040 are:

Five Core Functions

- Define the Scope of Work
- Analyze the Hazards
- Develop and Implement Hazard Controls
- Perform Work within Controls
- Provide Feedback and Continuous Improvement

Eight Guiding Principles

- Line Management Responsibility for Safety
- Clear Roles and Responsibilities
- Competence Commensurate with Responsibilities
- Balanced Priorities
- Identification of Safety Standards and Requirements
- Engineered and Hazard Controls Tailored to Function/Work Being Designed or Performed
- Approval to Proceed/Work Authorization
- Worker Involvement

DUF6-UDS-PLN-006 and DUF6-UDS-PLN-040 identify the ISMS process for work performed on the Project. As such, individual subcontractors are not required to submit a separate ISMS plan; however, they will be required to submit a letter stating their commitment to the ISMS process.

DUF6-UDS-PLN-040 is also discussed further in Section 5 as it relates to the Safety Management Programs.

ISMS + Zero Accident Commitment = UDS Safety First Culture

END OF SECTION

5. SAFETY MANAGEMENT PROGRAMS

DUF6-UDS-PLN-037, *Safety Management Program Descriptions for the UDS DUF₆ Conversion Project*, provides descriptions of the UDS Safety Management Programs (SMPs) that collectively address the 12 SMP areas addressed in DOE-STD-3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analysis*, Change Notice 3 (DOE 2006). The SMP Descriptions are written at a level of detail to satisfy the requirement of DOE-STD-3009-94 for Documented Safety Analysis (DSA) for Hazard Category 2 and 3 Nuclear Facilities.

The purpose of the SMP Descriptions document is to present information that is common to the UDS managed facilities and support organizations. It is intended to complement the facility-specific Documented Safety Analysis (DSAs).

DUF6-UDS-PLN-037 is incorporated by reference into the DSA for each UDS managed facility and is included in the safety basis for that facility. If the facility relies on the programs and details described in the SMP Descriptions document, the facility may reference the SMP Descriptions in its safety basis documents. The SMP descriptions do not contain facility-specific structural and process descriptions, Hazard Analyses, Accident Analyses, functional classifications, or Technical Safety Requirements (TSRs). These items are specific to each facility that prepares safety basis documents, and are addressed in the facility safety basis documents. In the chapter or chapters of each DSA where SMPs for the facility are to be described, any additional information regarding the specifics of SMP requirements at that facility is to be provided. This additional facility-specific information could expand upon or amend the information presented for the respective SMPs in this document.

The UDS Unreviewed Safety Question (USQ) process, as described in UDS-U-NSP-0002, *Unreviewed Safety Questions*, is used to evaluate changes to UDS SMPs related documents cited in the SMP Description document.

The UDS SMP Descriptions have been developed in accordance with the applicable requirements as defined in the UDS contract with DOE and as an integral part of the UDS Integrated Safety Management System (ISMS). DUF6-UDS-PLN-040, *Integrated Safety Management System Plan for Operations*, describes the UDS approach to managing work within the scope of the UDS contract for O&M, including the associated safety management systems and SMPs.

The UDS ISMS description, as described in DUF6-UDS-PLN-040, *Integrated Safety Management System Plan for Operations*, reflects the UDS approach for integrating safety into all aspects of work planning and execution. UDS applies key processes inherent to the ISMS to measure, maintain, and improve the effectiveness of the ISMS throughout the year. Standard management processes to ensure competence commensurate with responsibilities, and safety basis upgrades are continuous, ongoing ISMS maintenance processes. The lessons learned process described in procedure UDS-U-QAP-0017, *Lessons Learned*, and UDS-SHP-101, *Safety Concerns*, provide

feedback for improving the system. Trending and reporting safety performance objectives, performance measures and commitments are tools for measuring system effectiveness.

These processes are coupled with an ongoing assessment program described in DUF6-UDS-PLN-003, *Project Quality Assurance Plan*, which is applied at each level of the organization from the worker at individual activities through the facilities, including subcontractor activities at the site. Assessments are performed in accordance with procedures UDS-U-QAP-0012, *Independent Assessments*, UDS-U-QAP-0013, *Management Assessments*, and UDS-U-QAP-0014, *Supplier Quality Program Evaluation*. SMP subject matter experts (SMEs) also participate in the assessment processes.

The twelve safety management program descriptions addressed in DUF6-UDS-PLN-037 include:

Prevention of Inadvertent Criticality	Procedures and Training
Radiation Protection	Human Factors
Hazardous Material Protection	Quality Assurance
Radioactive and Hazardous Waste Management	Emergency Preparedness
Initial Testing, In-Service Surveillance, and Maintenance	Provisions for Decontamination and Decommissioning
Operational Safety	Management, Organization, and Institutional Safety Provisions

END OF SECTION

6. ROLES AND RESPONSIBILITIES

Clear definitions of authorities, roles, and responsibilities related to implementation of the WSHP are defined in the following subsections. First, the UDS organizational structure is defined, and then roles and responsibilities are addressed for UDS management, employees, and subcontractors.

6.1 Organizational Structure

The organizational structure of the Project is established in DUF6-UDS-PLN-001, *Project Management Plan*. These organizational structures have been established to ensure that roles, responsibilities, and reporting relationships are clearly recognized and understood. Roles and responsibilities are also identified in specific plans and procedures. Organizational charts as they relate to ES&H can be found in Figures 3.1 and 3.2 of DUF6-UDS-PLN-006, *Integrated Safety Management System Plan for Design and Construction*, and in Figure 3.1 of DUF6-UDS-PLN-040, *Integrated Safety Management System Plan for Operations*. Additionally, roles and responsibilities for implementation of the WSHP are summarized in Table 6-1, *Roles and Responsibilities for Implementation of WSHP*.

For the purposes of this WSHP, senior managers include the direct reports to the project manager; S&H management include the ESH/security manager, the deputy ES&H manager – Construction, and the site ES&H managers; and the functional and line managers includes the site plant managers, resident construction managers, first line supervision, and subcontractor project and line management. In accordance with Section 5.1 of DUF6-UDS-PLN-006, *Integrated Safety Management System Plan for Design and Construction*, and Section 4.1 of DUF6-UDS-PLN-040, *Integrated Safety Management System Plan for Operations* each line manager is held accountable for the Project's safety performance through their performance review.

Table 6-1. Roles and Responsibilities for Implementation of WSHP

Position	Job Description/Responsibility
President/ Project Manager(PM)	<ul style="list-style-type: none"> • Adopting and ensuring adherence to policies for safety and health (S&H) performance • Maintaining a work environment wherein S&H performance is recognized as a priority by all associates • Ensuring that qualified individuals are assigned to direct and manage the WSHP program • Ensuring that written policies, goals, and objectives for the WSHP are established
Senior Managers	<ul style="list-style-type: none"> • Building awareness by explaining and communicating its commitment to policies and values relative to S&H performance • Ensuring that activities conform to S&H related policies, laws, regulations, and internal procedural requirements
S&H	<ul style="list-style-type: none"> • Ensuring that S&H management system

Position	Job Description/Responsibility
Management	<p>requirements/procedures are established, implemented and maintained in accordance with 10 CFR 851 including:</p> <ul style="list-style-type: none"> ○ Ensuring that processes are in place to involve workers and their elected representatives in the development of the worker safety and health program goals, objectives, and performance measures and in the identification and control of hazards in the workplace ○ Ensuring that processes are in place to provide workers with access to information relevant to the worker safety and health program ○ Ensuring that processes are in place for reporting without reprisal of job-related fatalities, injuries, illnesses, incidents, and hazards and recommendations about appropriate hazard controls ○ Ensuring that processes are in place to provide for prompt response to such reports ○ Ensuring that processes are in place to provide for regular communication with workers about workplace safety and health matters ○ Ensuring that processes are in place to provide for worker stop/suspend work authority for safety related reasons without fear of reprisal ○ Ensuring that processes are in place to inform workers of their rights and responsibilities by appropriate means including adequate posting of the DOE-designated Worker Safety Poster • Reporting on the performance of the S&H management system to management for review and as a basis for improvement of the system
Functional and Line Managers	<ul style="list-style-type: none"> • Ensuring that prompt response is provided to individuals who report unsafe conditions or make recommendations • Accepting responsibility and accountability for S&H performance associated with the work performed under their direct supervision, including: <ul style="list-style-type: none"> ○ Determining and allocating the resources necessary to comply with S&H related policies, laws, regulations, and program requirements ○ Ensuring that subordinates operate in strict compliance with the policies and applicable procedural requirements ○ Making subordinates aware of their roles and responsibilities relative to the S&H programs, including emergency preparedness and response

Position	Job Description/Responsibility
	<ul style="list-style-type: none">○ Determining and ensuring completion of training requirements for their associates○ Motivating subordinates to continually improve through encouragement to make suggestions to improve S&H performance and recognition for effecting associated improvements○ Controlling processes, including suspension of operations for S&H reasons
All Associates (including DOE, UDS, subcontracted employees, unescorted vendors, and visitors)	<ul style="list-style-type: none">• Committing and adhering to S&H related policies, values and requirements, by:<ul style="list-style-type: none">○ Accepting accountability, within the scope of their responsibilities, for S&H performance○ Taking responsibility for S&H improvements○ Anticipating and initiating action including suspension of operations to preclude any nonconformance relating to the S&H management system○ Identifying and recording any S&H problems○ Initiating, recommending, or providing solutions to those problems and verifying the implementation of solutions○ Controlling further S&H program activities related to an area of nonconformance until the deficiency or unsatisfactory condition has been corrected

END OF SECTION

7. HAZARD IDENTIFICATION AND ASSESSMENT

The identification and assessment of hazards takes place at various phases during the project and prior to performing a specific work task. Within this function, potential hazards are identified and assessed for the defined work scope to assure that appropriate measures are taken to prevent or mitigate potential exposure to the hazards. Consideration is given for interaction for between workplace hazards and other hazards such as radiological hazards. The actual mechanism for this function varies depending on the phase of the Project. Hazards will also be addressed when selecting or purchasing equipment, products, and services.

During design, a detailed analyses of facility systems and components has have been conducted (e.g., Preliminary Documented Safety Analysis, Preliminary Fire Hazard Analysis, ALARA reviews). The process is conducted in accordance with 10 CFR 830, Subpart B, *Safety Basis Requirements*, and the process safety requirements of 29 CFR 1910.119, *Process Safety Management of Highly Hazardous Chemicals* and continues until DOE approval of the DSA and TSR for the O&M phase.

These analyzes are documented and discussed further in DUF6-C-G-PSA-001, *Paducah DUF6 Conversion Facility Preliminary Documented Safety Analysis*, DUF6-X-G-PSA-001, *Portsmouth DUF6 Conversion Facility Preliminary Documented Safety Analysis*, DUF6-C-F-FHA-001, *Preliminary Fire Hazards Analysis Paducah DUF6 Conversion Facility*, DUF6-X-F-FHA-001, *Preliminary Fire Hazards Analysis Portsmouth DUF6 Conversion Facility*, and their supporting documents.

During construction, discrete subcontract work packages are developed to facilitate the definition of work steps. Each subcontractor is then required to further define and analyze the hazards and to develop appropriate hazard controls such as AHAs and hazard specific permits. Work hazards (e.g., chemical, physical, biological, and safety work place hazards) are identified and assessed through the development of Activity Hazard Analyzes (AHAs) and hazard specific permits. UDS-VRD-101, *Hazard Coordination and Work Control*, is the primary document utilized during construction that documents the hazard identification and assessment process.

For conversion facility O&M activities, each system or component is further defined to identify the required work steps and to assess those steps to ensure the identification of potential hazards (e.g., chemical, biological, and safety work place hazards) and, ultimately, the appropriate hazard controls for each. As appropriate, worker exposure monitoring is performed utilizing recognized testing methodologies and accredited/certified laboratories as required.

For routine and non-routine operating and maintenance activities, hazard identification and assessment will be performed in accordance with UDS-U-SHP-0211, *Hazard Assessment*, and work control will be performed in accordance with UDS-U-GFP-0108, *Work Control Process*.

UDS-SHP-307, *Preparation/Maintenance of Hazards Surveys, Emergency Management Planning Hazards Assessments, and Emergency Action level Development*, defines the process for identifying and assessing those hazardous materials, which are present in sufficient quantities to pose a serious threat to workers, the public, or the environment. The results of the hazards survey and emergency planning hazards analysis (EPHA) provide the basis for establishing a graded approach that will meet the requirements outlined in DOE Order 151.1C and are used specifically in preparing the emergency action levels for use in categorizing and classifying postulated events.

DUF6-C-G-EMH-001, *Emergency Planning Hazards Assessment for the Paducah DOE C-745 Cylinder Storage Yards*, and DUF6-X-G-EMH-001, *Emergency Planning Hazards Assessment for the X-745C, X-745E, and X-745G Cylinder Storage Yards Portsmouth Gaseous Diffusion Plant*, documents the EPHA process for the UDS cylinder storage yards. Similar documents will be prepared for the O&M of the DUF₆ conversion facilities.

7.1 Known Chemical Hazards

During construction there is no known chemical contamination above any level of concern on the Project site locations; however, any soils excavated will be periodically monitored for possible chemical contamination such as color shift, vapor smells, or free liquids as indicators of possible chemical contamination. Additional chemical hazards during construction are addressed in DUF6-UDS-PLN-041, *Environmental Safety and Health Plan – Construction Phase*.

During operations and maintenance of the DUF₆ Conversion Facilities, the primary chemical hazards of concern, include natural gas, uranium hexafluoride, uranyl fluoride, uranium oxide, hydrogen fluoride (HF), hydrogen gas, hydrated lime, and potassium hydroxide. These hazards are identified and discussed further in DUF6-C-G-DSA-001, *Documented Safety Analysis for the DUF₆ Conversion Facility – Paducah, Kentucky*; DUF6-X-G-DSA-001, *Documented Safety Analysis for the DUF₆ Conversion Facility – Portsmouth, Ohio*; UDS-C-TSR-002, *Technical Safety Requirements for the DUF₆ Conversion Facility, Paducah, KY*; and UDS-X-TSR-002, *Technical Safety Requirements for the DUF₆ Conversion Facility, Piketon, Ohio*; and their supporting documents.

The chemical hazard classification is *High* based on the potential unmitigated consequences of a release of HF.

7.2 Known Radiological Hazards

The primary radiological contaminant at both UDS facilities is uranium. Uranium assays will range from depleted (0.2% U²³⁵) to slightly enriched (6.0% U²³⁵). In addition, there are also quantities of thorium and technetium isotopes at the sites as well as trace quantities of americium, neptunium, and plutonium.

There is not any known radiological contamination above any level of concern on the DUF₆ Conversion Project site locations; however, UDS will monitor excavated soils for radiological contamination; and equipment and tools will be surveyed prior to entry and exiting the site for radiological contamination in accordance with *Construction Equipment Surveys*, UDS-CMP-042. Area dose exposure monitoring will be performed, as applicable, to determine the effect of the cylinders stored in nearby storage yards at the Paducah location.

During operations and maintenance of the DUF₆ Conversion Facilities, the primary radiological hazards of concern include DUF₆ and uranium oxide. These hazards are identified and discussed further in DUF6-C-G-PSA-001, *Paducah DUF6 Conversion Facility Preliminary Documented Safety Analysis*, and DUF6-X-G-PSA-001, *Portsmouth DUF6 Conversion Facility Preliminary Documented Safety Analysis*, and their supporting documents.

Based on the total resident radionuclide inventory the conversion building and all nuclear operations contained within the building will be operated as a Hazard Category 3 nuclear facility with the full cylinder staging area, the oxide storage area, and the empty and heal staging area operated as Hazard Category 2 nuclear facilities. DUF₆ does not contain fissionable material in a form and quantity sufficient to pose a potential for nuclear criticality. As such, a nuclear criticality event is not postulated within the conversion process.

The cylinder storage yards will continue to be managed as a Hazard Category 2 nuclear facility. UF₆ at various degrees of enrichment or depletion with respect to the U-235 isotope is the primary fissionable material potential present in quantities and concentration of concern. U-235 is a fissile nuclide that is capable of supporting self-sustaining neutron chain reaction by interaction with thermal (slow) neutrons. The specific criticality safety concerns vary, depending on the quantity and forms of U-235 present in the cylinder storage yards. Criticality concerns will be managed in accordance with UDS-U-NSP-0003, *Nuclear Criticality Safety Program*, and its supporting documents.

All Project activities that have the potential to result in occupational exposure to ionizing radiation will be performed consistent with the provisions identified in DUF6-UDS-PLN-007, *Radiation Protection Program*, and its supporting documents.

The unreviewed safety question process as identified in UDS-U-NSP-0002, *Unreviewed Safety Question*, assures that proposed changes to Structures, Systems, and Components, changes to safety basis documentation, and changes to programs and procedures are consistent with the requirements and commitments established in the facility safety bases or obtain proper DOE review and approval.

END OF SECTION

8. HAZARD PREVENTION AND ABATEMENT

Once the hazards have been identified and assessed (either during the design phase or for a specific task/work location), appropriate preventive or mitigative systems, structures, components are credited and engineered, and administrative controls are identified and implemented to ensure there is no significant risk to the public, worker, and environment.

Controls to mitigate hazards are identified through TSRs and other safety basis documents; regulatory permits, requirements, and agreements; operating procedures; work control documents; hazard specific permits; and training. Proposed controls shall be adequate to protect workers, other site personnel, the public, and the environment from the consequences of normal operations, accidents, or releases to the environment. When selecting or purchasing equipment, products, and services, UDS will address hazards and appropriate controls in accordance with the hazard control hierarchy below.

The selection of hazard controls is based on the following hierarchy:

1. Elimination or substitution
2. Engineering
3. Work Practices and Administrative Controls (procedures, plans, directives, etc.)
4. Personal Protection Equipment (safety harness, respirator, etc.)

During design, controls include both those necessary to maintain the safety basis that ensures operations safety. The DSAs and TSRs are the formal documentation of the hazards categorization and the safety classification for constructed facilities and include a description of the safety management programs used to protect workers and the public (e.g., radiological control and fire protection programs). DUF6-UDS-PLN-021, *DUF6 Design Execution Plan*, provides the process for identification of system/component hazards, design requirements, and implementing appropriate controls based on this information.

During construction, prior to commencement of field-related activities, subcontractors are required to develop and submit for review and approval detailed written AHAs as appropriate to the site contract administrator. These controls utilize either (1) engineering (e.g., fall protection systems, specialized equipment, etc.), (2) administrative (e.g., plans, procedures, hazard specific permits, training, vendor requirement documents, work control packages, etc.), (3) personal protection equipment (e.g., safety harnesses, respirators, etc.) methodologies, or the combination of any or all three. UDS-VRD-101, *Hazard Coordination and Work Control*, is the primary document utilized during construction that identifies the requirements for the hazard prevention/abatement process.

For cylinder storage yard surveillance and maintenance and conversion facility O&M activities, controls are established for both worker and facility safety and for protecting the public and the environment. S&H controls for workers are tailored to the specific task/work location. Requirements identified in the TSRs and other safety basis documents and regulatory permits, requirements, and agreements are implemented through equipment/component design, operating procedures, and work control processes. Engineering and administrative controls are put in place where necessary to protect workers, the site, and adjacent environment. UDS-U-SHP-0211, *Hazard Assessment*, and UDS-U-GFP-0108, *Work Control Process*, are the primary documents utilized during operations that document the hazard prevention/abatement process. For routine work activities, O&M procedures will be developed that integrate the mitigation of identified hazards into the work process.

For existing hazards identified in the workplace, UDS will:

- (i) Prioritize and implement abatement actions according to the risk to workers;
- (ii) Implement interim protective measures pending final abatement; and
- (iii) Protect workers from dangerous safety and health conditions;

8.1 Implementing Hazard Controls

Based on work to be performed, identified hazards, and method of accomplishment, appropriate tools are utilized to define and implement necessary controls. These controls may include one or more of the following:

Elimination of hazard	Waste management plans
Task work plans	Work instructions
Activity work packages	Safety basis documents
Procedures	Designs and/or design changes
ES&H plans	Signs and posting
Activity hazard assessments	Training
Inspections and checklist	Personal Protective Equipment

END OF SECTION

9. SAFETY AND HEALTH STANDARDS

UDS has negotiated with DOE a set of Work Smart Standards (WSS) that has been included in Attachment N, *List of Applicable DOE Directives*, to DOE Contract DE-AC05-02OR22717. The WSS set includes two parts. The first part includes the appropriate state and federal regulations and associated permits and authorizations. The second part includes WSSs related to DOE Directives. These standards have been identified by 1) analysis of the existing set of WSS applicable to operation of the cylinder yards and 2) analysis by the WSS identification team. The *Work Smart Standards Final Report*, DUF6-G-RGN-006, identifies the negotiated set of WSS, the applicability of the set, and describes the Necessary and Sufficient Work Smart process utilized to develop the WSS set.

Periodically, UDS compliance officers will monitor the DOE online database system “Directives Homepage – Alerts” for changes (additions/deletions) in DOE Orders/Directives and federal regulations. In addition, state laws and regulations will also be monitored for changes.

When UDS is notified by the DOE contracting officer of a new or revised DOE Order or Directive that may be applicable to the UDS contract, UDS will review the change for impact as required in the UDS contract. DOE will be advised of the results of this review within the prescribed time limit. DOE will then determine when the contract will be modified to incorporate the change.

During the design phase, external constraints, such as laws, rules, codes, standards, regulations, and Attachment N of the contract, were examined for their applicability. Relevant criteria and requirements (functional and performance) were extracted and entered into the System Requirements Documents which establish and preserve the functional requirements of the facility.

The standards identified in 10 CFR 851.23 can not be construed as relieving UDS from complying with any additional specific safety and health requirement that it determines to be necessary to protect the safety and health of workers.

See Section 13.3 for the list of standards incorporated by reference in 10 CFR 851.27 and Attachment D for the applicability of all standards referenced in 10 CFR 851.

END OF SECTION

10. FUNCTIONAL AREAS

10.1 Construction Safety

The requirements of this function are primarily addressed in DUF6-UDS-PLN-041, *Environmental, Safety, and Health Plan - Construction Phase*, and its implementing documents. These documents provide necessary and sufficient protection for workers, the public, and the environment during the construction phase of the Depleted Uranium Hexafluoride (DUF₆) Conversion Project. The plan incorporates a graded approach based upon the severity of the hazards associated with the Project scope of work and risk. The plan includes relevant information concerning scope of work, site hazards, appropriate company level procedures, vendor requirement documents (VRDs), and other work control documents. Where necessary, a hazard specific plan may also be required by regulation to address activities that are more specific or subcontracted work (e.g., fall protection plans, steel erection plans). In all cases, the elements of this plan shall be flowed down to the lowest subtier contractor via their subcontracts to assure consistency/applicability.

UDS-VRD-101, *Work Coordination and Hazard Control*, is the primary document that provides requirements for coordinating work and controlling the hazards associated with work performed by subcontractor personnel. It assigns responsibility to subcontractor line management to safely control subcontract work activities by identifying and documenting existing and predictable hazards and by informing workers about these hazards and their mitigation.

Any subcontractor performing work at the site is required to be pre-qualified to bid work at the site and is required to submit an "ISMS Letter of Commitment" to the five core functions and eight guiding principles of ISMS and their company's commitment to zero accidents and the UDS Safety First culture. This letter must be signed by the current company president, chief executive officer, or other executive officer.

10.1.1 Management of Subcontractors

The subcontracting process is described in Section 3.4 of the *Integrated Safety Management System Plan for Design and Construction*. The procedures involving pre-qualifying, bidding, selecting a successful contractor, and then the daily management of the contractor are described in the *Construction Management Plan*, DUF6-UDS-PLN-013, and its supporting/implementing procedures.

10.2 Fire Protection

During design, as required in Section 2.1 of DUF6-UDS-PLN-021, *Design Execution Plan*, applicable codes and standards have been identified in the systems requirements documents, the system design description documents, and the facility design description documents. The identified codes and standards are then incorporated into the applicable specifications.

During construction, the requirements of this function are primarily addressed in Section 6.2 of DUF6-UDS-PLN-041, *Environmental, Safety and Health Plan - Construction Phase*. Subcontractor requirements for fire protection and prevention are also identified in UDS-VRD-801, *Flammable and Combustible Liquid Storage and Compressed Gas*, and UDS-VRD-802, *Fire Protection*.

For cylinder storage yard surveillance and maintenance and conversion facility O&M activities, the requirements of this function are addressed DUF6-UDS-PLN-024, *UDS Fire Protection Program Description*, and its implementing documents. DUF6-UDS-PLN-024 defines the scope, roles and responsibilities, organizational structure, and requirements for implementing fire protection (FP) program activities. The document also defines the administrative program responsibilities for ensuring that UDS maintains compliance with fire protection requirements when managing or overseeing subcontractors. The document is intended to implement the UDS FP Policy, UDS-POL-003, *Fire Protection*, and is the framework to guide UDS in systematically implementing a fire protection program on the project.

10.3 Explosives Safety

This functional area is not applicable under UDS's current contracted scope of work.

10.4 Pressure Safety

During design, as required in Section 2.1 of DUF6-UDS-PLN-021, *Design Execution Plan*, applicable codes and standards have been identified in the systems requirements documents and the system design description documents. The identified codes and standards are then incorporated into the piping and equipment specifications.

If national consensus codes are not applicable (because of pressure range, vessel geometry, use of special materials, etc.) UDS will implement measures to provide equivalent protection and ensure a level of safety greater than or equal to the level of protection afforded by ASME or applicable state or local code. These measures will include the following:

- Design drawings, sketches, and calculations will be reviewed and approved by a qualified independent design professional (i.e., professional engineer). Documented organizational peer review is acceptable.
- Qualified personnel will be used to perform examinations and inspections of materials, in-process fabrications, non-destructive tests, and acceptance test.
- Documentation, traceability, and accountability will be maintained for each pressure vessel or system, including descriptions of design, pressure conditions, testing, inspection, operation, repair, and maintenance.

During construction, as required in Section 5.7 of DUF6-UDS-PLN-003, *Project Quality Assurance Plan*, utilizing a graded approach, quality assurance conducts appropriate

verification to ensure that subcontractors and suppliers comply with applicable work processes requirements.

For cylinder storage yard surveillance and maintenance and conversion facility O&M activities, policies and procedures have been or will be developed, as applicable, to inspect, maintain, repair, and operate pressure systems.

During cylinder storage yard surveillance and maintenance activities UDS-U-CYP-0004, *Field Replacement and Repair of Non-Fissile UF₆ Cylinder Valves and Plugs*, provides multiple steps about monitoring the pressure of the cylinder prior to changing the valve or plug and warnings about locating oneself in front of a valve or plug being removed. The conversion operations procedures are in the early stages of development, but will include appropriate warnings for safely working with pressurized systems.

10.5 Firearms Safety

This functional area is not applicable under UDS's current contracted scope of work.

10.6 Industrial Hygiene

During design, as required in Section 2.1 of DUF6-UDS-PLN-021, *Design Execution Plan*, applicable codes and standards have been identified in the systems requirements documents, the system design description documents, and the facility design description documents. The identified codes and standards are then incorporated into the equipment specifications.

During construction, the requirements of this function are primarily addressed in Section 5 of DUF6-UDS-PLN-041, *Environmental, Safety and Health Plan - Construction Phase*. Subcontractor requirements for industrial hygiene are also identified in UDS-VRD-501, *Disease Control*; UDS-VRD-502, *Hearing Conservation*; UDS-VRD-503, *Respiratory Protection*; UDS-VRD-504, *Exposure Assessments*; UDS-VRD-505, *Lasers*; UDS-VRD-507, *Confined Spaces*; and UDS-VRD-601, *Hazard Communication*.

For cylinder storage yard surveillance and maintenance and conversion facility O&M activities, UDS will implement a comprehensive industrial hygiene program that includes initial or baseline surveys and periodic re-surveys and/or exposure monitoring as appropriate. Application of the graded approach is primarily a function of the magnitude of the hazard that can influence the breadth of description (e.g., larger quantities of material may warrant a wider range of monitoring concerns or new unanticipated hazards may be discovered as work progresses). The magnitude of the hazard and new hazards impacts the application of the graded approach by influencing the hazardous material training, the hazard analysis, selection of personal protective equipment, hazardous material monitoring, and the instrumentation selected to obtain process information and to conduct personal exposure monitoring and work area sampling. The primary documents utilized during O&M that implement the industrial hygiene program include UDS-U-SHP-0501, *Occupational Medicine*; UDS-U-SHP-0502, *Hearing Conservation*; UDS-SHP-503, *Blood-borne Pathogens*; UDS-U-SHP-0504, *Respiratory Protection*; UDS-U-SHP-0505, *Exposure Assessments*; UDS-SHP-508,

Ergonomics; UDS-SHP-510, Embryo/Fetus Protection; UDS-SHP-511, Biological Monitoring for Industrial Chemicals; UDS-SHP-514, Temperature Extremes; and UDS-U-SHP-0601, Hazard Communication Program.

10.7 Biological Safety

This functional area is not applicable under UDS's current contracted scope of work.

10.8 Occupational Medicine

10.8.1 Occupational Health Program

During construction, the requirements for an occupational health program for subcontractors are identified in Section 5.5 of DUF6-UDS-PLN-041, *Environmental, Safety and Health Plan - Construction Phase*.

For cylinder storage yard surveillance and maintenance and conversion facility O&M activities, the requirements for an occupational health program are identified in UDS-U-SHP-0501, *Occupational Medicine*.

10.8.2 HAZWOPER Physicals

According to the requirements of 29 CFR 1910.120 and 29 CFR 1926.65, site personnel who meet the criteria listed below must have a physical examination conducted by a physician who is board-certified in occupational medicine to determine and document the qualification of the worker to perform work at hazardous waste operations. Criteria for inclusion in the occupational health program are listed below:

- Employees who are or may be exposed to permissible exposure limits of hazardous substances or health hazards for 30 or more days a year
- Employees who wear a respirator for 30 or more days a year
- Members of organized hazardous material teams
- Employees who are injured as a result of overexposure during a site emergency
- Employees who show symptoms of illness that may have resulted from exposure to hazardous substances
- The examining physician shall document physical evaluations/examinations through written approval.

10.8.3 Additional OSHA-Specific Medical Monitoring Requirements

The Project will adhere to the medical monitoring requirements specified in 29 CFR 1910, Subpart Z, *Toxic and Hazardous Substances*, and 29 CFR 1926, *Safety and Health Regulations for Construction*. There may be additional work practices that require implementation of the above referenced medical monitoring requirements.

10.8.4 Hearing Conservation

Personnel who may be exposed to noise levels at or above 85 dBa as an eight-hour time-weighted average without regard to hearing protection devices are required to participate in the hearing conservation program in accordance with UDS-U-SHP-0502, *Hearing Conservation*. Requirements for hearing conservation for construction are identified in UDS-VRD-502, *Hearing Conservation*.

10.9 Motor Vehicle Safety

During construction, the requirements of this function are addressed in Section 6.1.8.1 of DUF6-UDS-PLN-041, *Environmental Safety and Health Plan for Construction*, and Section 3.4 of UDS-VRD-106, *General Requirements*.

For cylinder storage yard surveillance and maintenance and conversion facility O&M activities, the requirements of this function are addressed in Section 5.3 of UDS-SHP-102, *General Requirements*, and UDS-GFP-109, *Management of Fleet Vehicles*.

10.10 Electrical Safety

All electrical work shall be performed in compliance with applicable codes identified in National Fire Protection Association (NFPA) 70, *National Electric Code*; NFPA 70E, *Standard for Electrical Safety in the Workplace*; and OSHA Standards such as 29 CFR 1910 Subpart S, *Electrical*, and 29 CFR 1926 Subpart K, *Electrical*.

10.10.1 Electrical Safety Program

During construction, electrical subcontractors will utilize a NFPA 70E compliant electrical safety program.

For conversion facility O&M activities and at the Paducah site cylinder storage yards, a NFPA 70E electrical safety program (UDS-U-SHP-0214, *UDS Electrical Safety Program*) will be developed for utilization in the conversion facility. UDS-U-SHP-0215, *Working On or Near Energized Electrical Components*, will be utilized with UDS-U-SHP-0214 with a permit when working on or near energized electrical components exceeding 50 volts. Work on or near energized electrical components is not anticipated during the maintenance phase of the cylinder storage yards at the Portsmouth site. However, at the Paducah site there is limited work in the cylinder storage yards that may require work on or near energized electrical components. UDS will implement the Electrical Safety Program that incorporates the elements of NFPA 70E for worker protection through the identification of energized hazards exceeding 50 volts. The Program includes documented arc flash analysis of energized sources, with associated employee access boundaries. Sources will be appropriately labeled following NFPA and OSHA requirements. UDS does not anticipate full implementation of the program until start up and turnover activities begin.

10.10.2 Lockout/Tagout of Hazardous Energy Sources

During construction, subcontractors are required to utilize UDS-CMP-039, *Construction Safety and Control Tagging*, as their hazardous energy control program.

Under the current scope of work for maintenance of the cylinder storage yards at the Portsmouth site there is not any work anticipated which would require the utilization of an Energy Control Program. However, at the Paducah site there is limited work in the cylinder storage yards that may require energy isolation. For these instances the USEC Procedure CHP2-SH-IS1065, *Instructions for Lockout/Tagout* is utilized to establish proper isolation from hazardous energy sources. This procedure is specifically tailored for use by DOE subcontractors as well as by USEC. LOTO procedures (UDS-X-SHP-0214 and UDS-C-SHP-0212), which mirror each site's USEC LOTO procedure will be developed for conversion facilities O&M.

END OF SECTION

11. TRAINING AND INFORMATION

During construction, requirements for training are identified in DUF6-UDS-PLN-041, *Environmental, Safety and Health Plan - Construction Phase*, and its implementing documents. UDS-VRD-102, *Training and Indoctrination*, establishes the minimum requirements for training and indoctrinating for subcontractors.

For cylinder storage yard surveillance and maintenance and conversion facility O&M activities, the UDS training and qualification process assures that needed skills for the workforce are identified and developed, and documents knowledge, experience, abilities, and competencies of the workforce for key positions requiring qualification. This process is described in *Training Plan*, DUF6-UDS-PLN-027. This plan describes how UDS will implement the requirements of DOE Order 5480.20A, Selection, Training, and Qualification Requirements for Personnel in DOE Nuclear Facilities. The training and qualification requirements in this program are developed, maintained, and implemented using a graded approach in a standardized, comprehensive manner utilizing the systematic approach to training.

11.1 General Employee Training

All UDS employees, subcontractors, and visitors who spend more than 40 hours a year on the project site are required initially to complete General Employee Training (GET) and, thereafter, complete GET refresher training session every 24 months or more frequently in those cases deemed appropriate. GET encompasses the primary functions of the various sites and their responsibility to DOE, the security system, emergency programs, various emergency signals, and appropriate actions that need to be taken by each individual; general ES&H topics and basic radiological awareness training; and the hazard communication program and how it affects employees.

In accordance with Section 3.1.2 of UDS-VRD-102, *Training and Qualification*, and Section 4.22 of UDS-U-TRN-0001, *Training and Qualification*, requires that personnel who are exempt from having GET training due to their limited time on site must be escorted. This escort is responsible for ensuring that in the event of an emergency situation, the untrained person knows what actions are necessary.

11.2 New Hire Orientation Briefing

In accordance with Section 3.1.4 of UDS-VRD-102, *Training and Qualification*, and Section 10 of UDS-HRP-001, *Human Resources Policy Manual*, requires that all personnel shall be required to attend a new hire orientation briefing prior to initially performing work. The briefing shall highlight the information pertinent to the project, the implementation of ISMS and 10 CFR 851 requirements, and UDS's commitment to Zero Accidents and the Safety First culture.

11.3 Hazard Communication Program and Training

As required in 29 CFR 1910.1200/1926.59, all personnel having the potential for exposure to hazardous materials shall be trained in the use of the materials, PPE required, and the emergency procedures associated with the materials they will be expected to use. All personnel shall be trained, be familiar with this plan, and have access to material safety data sheets for all materials with which they work. This requirement is implemented in accordance with UDS-U-SHP-0601, *Hazard Communication Program*.

In addition, all subcontractors shall have a written hazard communication program in accordance with the requirements identified in *Hazard Communication*, UDS-VRD-601.

11.4 Task/Hazard Specific Training

Employees (including subcontractor employees) who are assigned to a work task shall review applicable work control documents (i.e., AHAs, hazard specific permits/work plans, operating procedures) before their involvement in the work activity to ensure that they are aware of the actual and potential hazards and the implementation of any control measures identified during the hazard evaluation.

If a change in condition occurs or new information is discovered, the work control document will be revised to address the change and employees will be trained to the changes.

11.5 Plan of the Day Meetings

Documented daily briefings shall be conducted by each supervisor to summarize planned activities, identify new hazards, or clarify any task or project-related issues pertaining to their crew. Applicable worker personnel are required to attend daily briefings, which may include but are not limited to the following subjects:

- Safety topic
- Worker safety issues
- Task-specific PPE and respiratory requirements
- Requirements identified by AHAs or other work control documentation
- Procedures and any approved deviations to the prescribed procedures
- Previous lessons learned
- Opportunity for employee feedback

Workers who miss the daily meeting will be given a review of pertinent information covered during the meeting (including the safety topic) prior to starting the day's activities.

11.6 Other

Workers who have worker safety and health program responsibilities will receive training and information necessary for them to carry out those responsibilities.

END OF SECTION

12. RECORDKEEPING AND REPORTING

During construction, requirements for recordkeeping and reporting are identified in Sections 3.3 and 9.3 of DUF6-UDS-PLN-041, *Environmental, Safety and Health Plan - Construction Phase*.

For cylinder storage yard surveillance and maintenance and conversion facility O&M activities, requirements for recordkeeping and reporting are identified in UDS-U-DMP-0002, *Records Management Program*, and topic specific implementing documents.

UDS shall not conceal nor destroy any information concerning non-compliance or potential noncompliance with the requirements as identified in 10 CFR 851.26(a).

12.1 Hazard Inventory, Assessment, and Control Records

UDS will establish and maintain complete and accurate records of all hazard inventory information, hazard assessments, exposure assessments, and exposure controls. Hazard inventory, assessment, and control records will be maintain in accordance with topic specific implementing documents.

12.2 Event Notification/Communication

In accordance with *Accident/Incident Reporting*, UDS-U-SHP-0301, all personnel, shall immediately notify (within 15 minutes) their supervisor about an event or condition that adversely affects or may adversely affect DOE, UDS, or subcontractor personnel, the public, property, the environment, or the DOE mission. This could include employee injury/illness and any accident; incident; near-miss occurrence; accident precursor that could result in bodily injury/illness or damage to equipment and facilities; potential Price Anderson Amendment Act noncompliance, environmental release; or any other unplanned event that may be a violation of a regulatory requirement or that may be viewed negatively by the public, UDS, or DOE. In situations where any of the conditions mentioned above occur, the scene may not be changed without UDS concurrence unless it is to mitigate an immediate hazard or stop a spill in progress.

Investigations of any events/conditions shall be performed in accordance with *Safety Related Investigation and Critique*, UDS-U-SHP-0305. Initial event reports and other applicable reports (i.e., First Reports of Injury and DOE 5484.3 Reports) shall be completed in accordance with UDS-U-SHP-0301 and UDS-U-SHP-0305.

UDS will ensure that the work-related injuries and illnesses of its workers and subcontractor workers are recorded and reported accurately and consistent with DOE Manual 231.1-1A, *Environment, Safety and Health Reporting Manual*, September 9, 2004.

Any subcontractor involved with the event shall provide applicable information to the UDS POC as requested.

12.3 Noncompliance Reporting

Worker safety noncompliances are reported in the DOE Nonconformance Tracking System (NTS) based on established reporting thresholds. A noncompliance that is below an NTS reporting threshold (a Non-NTS reportable) will be tracked internally. The UDS PAAA Coordinator makes a determination of reportability in accordance with UDS-U-QAP-0015. Corrective actions are tracked in accordance with UDS-U-QAP-0005, Condition Reporting.

Noncompliances are also assessed for reportability in the Occurrence Reporting and Processing System.

The Occurrence Reporting and Processing System may be initiated any time an individual/company reports problems, concerns, conditions, or events that have or could have an adverse or negative effect on safety, the environment, health, quality, security, or site operations. The UDS occurrence-reporting program is governed by UDS-U-QAP-0016, *Occurrence Reporting*. The occurrence-reporting system requires reporting, tracking and trending of occurrences, and development of corrective actions involving industrial and/or facility safety, health, property, operations, and/or the environment.

Tracking and trending of accidents, injuries, and illnesses will be performed in accordance with *Trending*, UDS-U-QAP-0019. Lessons learned are developed in accordance with *Lessons Learned*, UDS-U-QAP-0017.

12.4 Periodic Reporting

ISMS performance metrics will be established at the beginning of each fiscal year. UDS, with input from the safety committee, submits proposed metrics as part of the annual ISMS declaration submittal. Once performance metrics are approved by DOE, they are reported in the monthly project report and discussed, as necessary, at the monthly status meeting.

UDS will track, trend, and report additional lagging and leading performance measures to ensure that safety performance is properly measured. These additional measures shall be approved annually by DOE. The measures may vary from year-to-year based on the scope of anticipated project activities.

END OF SECTION

13. SUPPORTING INFORMATION

13.1 Requirement References

Requirement No.	Title
10 CFR 851	Worker Safety and Health Program

13.2 Source References

Source No.	Title
	DOE Contract No. DE-AC05-02OR22717
10 CFR 830, Subpart A	Nuclear Safety Management - Quality Assurance Requirements
10 CFR 830, Subpart B	Safety Basis Requirements
48 CFR 970.5223-1	Integration of environment, safety, and health into work planning and execution
DOE G 440.1-8	Implementation Guide for use with 10 CFR 851 Worker Safety and Health Program
DOE M 231.1-1A	Environment, Safety and Health Reporting Manual
DOE O 440.1A	Worker Protection Management for DOE Federal and Contractor Employees
DOE-STD-3009-94	Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analysis
NFPA 70	<i>National Electric Code</i>
NFPA 70E	<i>Standard for Electrical Safety in the Workplace</i>
29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
DUF6-UDS-PLN-001	<i>Project Management Plan</i>
DUF6-UDS-PLN-003	<i>DUF6 Conversion Project Quality Assurance Plan</i>
DUF6-UDS-PLN-006	<i>Integrated Safety Management System Plan for Design and Construction</i>
DUF6-UDS-PLN-007	<i>Radiation Safety Program</i>
DUF6-UDS-PLN-011	<i>Cylinder Surveillance and Maintenance Plan</i>
DUF6-UDS-PLN-013	<i>Construction Management Plan</i>
DUF6-UDS-PLN-014	<i>Conversion Facilities O&M Plan</i>
DUF6-UDS-PLN-015	<i>Document Management Plan</i>
DUF6-UDS-PLN-021	<i>Design Execution Plan</i>
DUF6-UDS-PLN-024	<i>UDS Fire Protection Program Description</i>
DUF6-UDS-PLN-027	<i>Training Plan</i>
DUF6-UDS-PLN-037	<i>Safety Management Program Descriptions for the UDS DUF6 Conversion Project</i>
DUF6-UDS-PLN-040	<i>Integrated Safety Management System Plan – Operations</i>
DUF6-UDS-PLN-041	<i>Environmental, Safety, and Health Plan – Construction Phase</i>
DUF6-G-RGN-006	<i>Work Smart Standards Final Report</i>
DUF6-C-G-EMH-001	<i>Emergency Planning Hazards Assessment for the Paducah DOE C-745 Cylinder Storage Yards</i>
DUF6-C-G-PSA-001	<i>Paducah Preliminary Documented Safety Analysis</i>
DUF6-X-G-EMH-001	<i>Emergency Planning Hazards Assessment for the X-745C, X-745E, and X-745G Cylinder Storage Yards Portsmouth Gaseous Diffusion Plant</i>
DUF6-X-G-PSA-001	<i>Portsmouth Preliminary Documented Safety Analysis</i>
UDS-CMP-039	<i>Construction Safety and Control Tagging</i>
UDS-CMP-042	<i>Construction Equipment Surveys</i>
UDS-U-DMP-0002	<i>Records Management Program</i>
UDS-C-TSR-002	<i>Technical Safety Requirements for the DUF6 Conversion Facility – Paducah, Kentucky</i>

Source No.	Title
UDS-X-TSR-002	<i>Technical Safety Requirements for the DUF6 Conversion Facility – Piketon, Ohio</i>
UDS-U-GFP-0108	<i>Work Control Process</i>
UDS-GFP-109	<i>Management of Fleet Vehicles</i>
UDS-HRP-001	<i>Human Resources Policy Manual</i>
UDS-U-QAP-0012	<i>Independent Assessments</i>
UDS-U-QAP-0013	<i>Management Assessments</i>
UDS-U-QAP-0014	<i>Supplier Quality Program Evaluation</i>
UDS-U-QAP-0016	<i>Occurrence Reporting</i>
UDS-U-QAP-0017	<i>Lessons Learned</i>
UDS-U-QAP-0019	<i>Trending</i>
UDS-QAP-022	<i>Stop Work</i>
UDS-U-QAP-0029	<i>Initial Event Notification</i>
UDS-C-SHP-0212	<i>Paducah Lockout/Tagout</i>
UDS-X-SHP-0214	<i>Portsmouth Lockout/Tagout</i>
UDS-SHP-102	<i>General Requirements</i>
UDS-SHP-103	<i>Safety Surveillances</i>
UDS-U-SHP-0214	<i>UDS Electrical Safety Program</i>
UDS-U-SHP-0215	<i>Working On or Near Energized Electrical Components</i>
UDS-U-SHP-0301	<i>Accident/Incident Reporting</i>
UDS-U-SHP-0305	<i>Safety Related Investigation and Critique</i>
UDS-U-TRN-0001	<i>Training and Qualification</i>
UDS-SHP-307	<i>Preparation/Maintenance of Hazards Surveys, Emergency Management Planning Hazards Assessments, and Emergency Action Level Development</i>
UDS-U-SHP-0501	<i>Occupational Medicine</i>
UDS-U-SHP-0502	<i>Hearing Conservation</i>
UDS-SHP-503	<i>Blood-borne Pathogens</i>
UDS-U-SHP-0504	<i>Respiratory Protection</i>
UDS-U-SHP-0505	<i>Exposure Assessments</i>
UDS-SHP-508	<i>Ergonomics</i>
UDS-SHP-510	<i>Embryo/Fetus Protection</i>
UDS-SHP-511	<i>Biological Monitoring for Industrial Chemicals</i>
UDS-SHP-514	<i>Temperature Extremes</i>
UDS-U-SHP-0601	<i>Hazard Communication Program</i>
UDS-U-NSP-0002	<i>Unreviewed Safety Questions</i>
UDS-VRD-101	<i>Work Coordination and Hazard Control</i>
UDS-VRD-102	<i>Training and Indoctrination</i>
UDS-VRD-104	<i>Suspension of Work (Safety Related)</i>
UDS-VRD-105	<i>Safety Surveillances</i>
UDS-VRD-106	<i>General Requirements</i>
UDS-VRD-501	<i>Disease Control</i>
UDS-VRD-502	<i>Hearing Conservation</i>
UDS-VRD-503	<i>Respiratory Protection</i>
UDS-VRD-504	<i>Exposure Assessments</i>
UDS-VRD-505	<i>Lasers</i>
UDS-VRD-507	<i>Confined Spaces</i>
UDS-VRD-601	<i>Hazard Communication</i>
UDS-VRD-801	<i>Flammable and Combustible Liquid Storage and Compressed Gas</i>
UDS-VRD-802	<i>Fire Protection</i>

NOTE: The most current list of document titles and numbers are maintained/available in the Master Index (electronic document management system – Documentum).

13.3 Standards Incorporated by Reference

The following are a list of standards that are incorporated by reference in 10 CFR 851:

NOTE: These standards are only applicable to the DUF₆ Conversion Project as they relate to the contracted scope of work.

Identifier	Title
ANSI Z88.23-1	American National Standard for Respiratory Protection, (1992)
ANSI Z136.1	Safe Use of Lasers, (2000)
ANSI Z49.1	Safety in Welding, Cutting, and Allied Processes, Sections 4.3 and E4.3, (1999)
NFPA 70	National Electric Code, (2005)
NPFA 70E	Standard for Electrical Safety in the Workplace, (2004)
ACGIH	Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, (2005)
ASME	Boilers and Pressure Code, Section I through XII including applicable Code Cases, (2004)
ASME B31	Pressure Vessels (as identified in ASME B31 codes below:)
ASME B31.1	Power Piping, and B31.1a, (2002) and Addenda to ASME B31.1, (2001)
ASME B31.2	Fuel Gas Piping, (1968)
ASME B31.3	Process Piping, (2002)
ASME B31.4	Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids, (2002)
ASME B31.5	Refrigeration Piping and heat Transfer Components, (2001) and B31.5a, (2004), and Addenda to ASME B31.5, (2001)
ASME B31.8	Gas Transmission and Distribution Piping Systems, (2003)
ASME B31.8S	Managing System Integrity of Gas Pipelines, (2001)
ASME B31.9	Building Services Piping, (1996)
ASME B31.11	Slurry Transportation Piping Systems, (2002)
ASME B31G	Manual for Determining Remaining Strength of Corroded Pipelines, (1991)
DOE M 231.1-1A	Environment, Safety and Health Reporting Manual, (September 9, 2004)
DOE M 440.1-1A	DOE Explosives Safety Manual, Contractor Requirements Document (Attachment 2), (January 9, 2006)

END OF SECTION

ATTACHMENT A

Uranium Disposition Services, LLC Environmental, Safety, and Health Policy

Our most valuable asset is our people; as such, they must be protected. Attaining our objective of world-class Environmental, Safety, and Health performance requires more than regulatory compliance alone.

UDS is committed to conducting our work scope in a way that protects people, property, and communities. We believe in two fundamental principles of safety:

1. All accidents, injuries, and occupational illnesses are preventable.
2. If a work task cannot be done safely, we will not do it.

To put these principles into practice, every employee will receive the appropriate training, equipment, and other resources necessary to complete assigned tasks in a safe and efficient manner. The following principles form the foundation for our approach to Environmental, Safety, and Health:

- UDS is totally committed to the Integrated Safety Management System (ISMS) that fosters continuous improvement through worker involvement and feedback.
- UDS is committed to Zero Accident performance.
- UDS is committed to providing a healthy and safe work environment. UDS will promote and strengthen a corporate culture where safety and environmental protection are of paramount importance.
- UDS is committed to pollution prevention and waste minimization.
- UDS integrates safety into all phases of work.
- UDS empowers employees to be involved. Employees are encouraged to take responsibility for their own personal safety and for the safety of others. Each employee proactively identifies workplace deficiencies and takes corrective action. Each employee has the authority to suspend/stop work if there is a potential for severe bodily injury or environmental impact.
- UDS believes that NO job should jeopardize safety or impact the environment.
- Lines of authority and responsibility will be clearly defined and communicated to everyone to ensure safety at all organizational levels.
- UDS management will employ contractors who are committed to safety and will hold them to the same standards as ourselves.
- No unsafe act will be tolerated! Safety is a condition for employment and for maintaining a contract with UDS.
- Management shall investigate accidents and incidents, then share and institutionalize what is learned.
- All personnel will possess the knowledge, training, experience, and/or skills necessary to safely perform their assigned duties. All personnel will then perform their duties as outlined and as mutually agreed upon.
- DOE Orders, OSHA Standards, and other regulations and contractual requirements are the minimum level of protection.

UDS is dedicated to these principles. They are the basis of UDS's "Safety First" culture.



Steve Polston – UDS President/Project Manager

May 15, 2007

Date

ATTACHMENT B

WSHP Implementing Document Matrix - Construction Phase

Document No.	Document Title
DUF6-G-RGN-006	<i>Work Smart Standards Final Report</i>
DUF6-UDS-PLN-001	<i>Project Management Plan</i>
DUF6-UDS-PLN-003	<i>DUF6 Conversion Project Quality Assurance Plan</i>
DUF6-UDS-PLN-006	<i>Integrated Safety Management System Plan for Design and Construction</i>
DUF6-UDS-PLN-007	<i>Radiation Safety Program</i>
DUF6-UDS-PLN-014	<i>Construction Management Plan</i>
DUF6-UDS-PLN-015	<i>Document Management Plan</i>
DUF6-UDS-PLN-021	<i>Design Execution Plan</i>
DUF6-UDS-PLN-029	<i>Safety Basis Documentation Plan</i>
DUF6-UDS-PLN-031	<i>Pollution Prevention and Waste Minimization Plan</i>
DUF6-UDS-PLN-032	<i>Paducah Site Security and Safeguards Plan – Construction Phase</i>
DUF6-UDS-PLN-034	<i>Portsmouth Site Security and Safeguards Plan – Construction Phase</i>
DUF6-UDS-PLN-041	<i>Environmental, Safety, and Health Plan – Construction Phase</i>
DUF6-UDS-PLN-044	<i>Paducah Emergency Management Plan</i>
DUF6-UDS-PLN-045	<i>Portsmouth Emergency Management Plan</i>
DUF6-UDS-PLN-046	<i>Construction Waste Management Plan</i>
DUF6-C-G-PSA-001	<i>Paducah Preliminary Documented Safety Analysis</i>
DUF6-X-G-PSA-001	<i>Portsmouth Preliminary Documented Safety Analysis</i>
UDS-CMP-009	<i>Job Rules</i>
UDS-CMP-013	<i>Construction Safety</i>
UDS-CMP-024	<i>Contractor Performance Evaluation</i>
UDS-CMP-039	<i>Construction Safety and Control Tagging</i>
UDS-CMP-040	<i>Hot Work</i>
UDS-CMP-041	<i>Excavation and Surface Penetrations</i>
UDS-CMP-042	<i>Construction Equipment Surveys</i>
UDS-U-DMP-0002	<i>Records Management Program</i>
UDS-QAP-004	<i>Graded Approach</i>
UDS-U-QAP-0005	<i>Condition Reporting</i>
UDS-U-QAP-0012	<i>Independent Assessments</i>
UDS-U-QAP-0013	<i>Management Assessments</i>
UDS-U-QAP-0014	<i>Supplier Quality Program Evaluation</i>
UDS-U-QAP-0015	<i>PAAA Reporting Procedure</i>
UDS-U-QAP-0016	<i>Occurrence Reporting</i>
UDS-U-QAP-0017	<i>Lessons Learned</i>
UDS-QAP-018	<i>Root Cause Analysis</i>
UDS-U-QAP-0019	<i>Trending</i>
UDS-QAP-022	<i>Stop Work</i>
UDS-U-QAP-0029	<i>Initial Event Notification</i>
UDS-SHP-104	<i>CAIRS</i>
UDS-U-SHP-0301	<i>Accident/Incident Reporting</i>
UDS-U-SHP-0305	<i>Safety Related Investigation and Critique</i>
UDS-U-TRN-0001	<i>Training and Qualification</i>
UDS-VRD-101	<i>Work Coordination and Hazard Control</i>
UDS-VRD-102	<i>Training and Indoctrination</i>

Document No.	Document Title
UDS-VRD-103	<i>Safety Concerns</i>
UDS-VRD-104	<i>Suspension of Work (Safety Related)</i>
UDS-VRD-105	<i>Safety Surveillances</i>
UDS-VRD-106	<i>General Requirements</i>
UDS-VRD-201	<i>Personal Protective Equipment</i>
UDS-VRD-202	<i>Aerial Lifts and Elevating Work Platforms</i>
UDS-VRD-203	<i>Concrete and Masonry</i>
UDS-VRD-204	<i>Material Handling, Storage, and Disposal</i>
UDS-VRD-205	<i>Safety Signs, Color codes, Barriers, and Defective Tagging</i>
UDS-VRD-206	<i>Temporary Facilities</i>
UDS-VRD-207	<i>Steel Erection</i>
UDS-VRD-208	<i>Excavation/Penetration</i>
UDS-VRD-209	<i>Hoisting and Rigging</i>
UDS-VRD-210	<i>Fall Protection</i>
UDS-VRD-501	<i>Disease Control</i>
UDS-VRD-502	<i>Hearing Conservation</i>
UDS-VRD-503	<i>Respiratory Protection</i>
UDS-VRD-504	<i>Exposure Assessments</i>
UDS-VRD-505	<i>Lasers</i>
UDS-VRD-507	<i>Confined Spaces</i>
UDS-VRD-601	<i>Hazard Communication</i>
UDS-VRD-801	<i>Flammable and Combustible Liquid Storage and Compressed Gas</i>
UDS-VRD-802	<i>Fire Protection</i>

NOTE: The most current list of document titles and numbers are maintained/available in the Master Index (electronic document management system – Documentum). This list of document titles and numbers identified in Attachment B is a representation of WSHP implementing documents, but is not intended to be an all-inclusive list.

ATTACHMENT C

IMPLEMENTING DOCUMENT MATRIX FOR OPERATION AND MAINTENANCE ACTIVITIES

WSHP Implementing Document Matrix – Operations and Maintenance Phase

Document No.	Document Title
EIS no. 040279	<i>Environmental Impact Statement for the DUF₆ Conversion Project - Portsmouth</i>
EIS no. 040280	<i>Environmental Impact Statement for the DUF₆ Conversion Project - Paducah</i>
DUF6-G-RGN-006	<i>Work Smart Standards Final Report</i>
DUF6-UDS-PLN-001	<i>Project Management Plan</i>
DUF6-UDS-PLN-003	<i>DUF₆ Conversion Project Quality Assurance Plan</i>
DUF6-UDS-PLN-005	<i>Waste Management Plan</i>
DUF6-UDS-PLN-007	<i>Radiation Safety Program</i>
DUF6-UDS-PLN-011	<i>Cylinder Surveillance and Maintenance Plan</i>
DUF6-UDS-PLN-014	<i>Conversion Facilities O&M Plan</i>
DUF6-UDS-PLN-015	<i>Document Management Plan</i>
DUF6-UDS-PLN-021	<i>Design Execution Plan</i>
DUF6-UDS-PLN-024	<i>UDS Fire Protection Program Description</i>
DUF6-UDS-PLN-027	<i>Training Plan</i>
DUF6-UDS-PLN-031	<i>Pollution Prevention and Waste Minimization Plan</i>
DUF6-UDS-PLN-033	<i>Paducah Security Plan</i>
DUF6-UDS-PLN-035	<i>Portsmouth Security Plan</i>
DUF6-UDS-PLN-037	<i>Safety Management Program Descriptions for the UDS DUF₆ Conversion Project</i>
DUF6-UDS-PLN-040	<i>Integrated Safety Management System Plan – Operations</i>
DUF6-UDS-PLN-044	<i>Paducah Emergency Management Plan</i>
DUF6-UDS-PLN-045	<i>Portsmouth Emergency Management Plan</i>
DUF6-UDS-PLN-047	<i>Sampling and Analysis Plan</i>
UDS-X-CYP-2520	<i>Portsmouth UF₆ Cylinder Surveillance and Maintenance Program</i>
DUF6-C-F-FHA-001	<i>Fire Hazards Analysis Paducah DUF₆ Conversion Facility</i>
DUF6-C-G-DSA-001	<i>Documented Safety Analysis for the DUF₆ Conversion Facility - Paducah, Kentucky</i>
UDS-C-TSR-002	<i>Technical Safety Requirements for the DUF₆ Conversion Facility – Paducah, Kentucky</i>
DUF6-X-F-FHA-001	<i>Fire Hazards Analysis Portsmouth DUF₆ Conversion Facility</i>
DUF6-X-G-DSA -001	<i>Documented Safety Analysis for the DUF₆ Conversion Facility - Piketon, Ohio</i>
UDS-X-TSR-002	<i>Technical Safety Requirements for the DUF₆ Conversion Facility – Piketon, Ohio</i>
DUF6-UDS-SRD-PADU	<i>Paducah Systems Requirement Document</i>
DUF6-UDS-SRD -PORT	<i>Portsmouth Systems Requirement Document</i>
DUF6-C-G-DSA-002	<i>Documented Safety Analysis for the Department of Energy C-745 UF₆ Cylinder Storage Yards, Paducah, Kentucky</i>
UDS-C-TSR-001	<i>Technical Safety Requirements for the DOE C-745 UF₆ Cylinder Storage Yards, Paducah, Kentucky</i>
DUF6-X-G-DSA-002	<i>Documented Safety Analysis for the Department of Energy X-745C, X-745E, and X-745G-1 UF₆ Cylinder Storage Yards, Piketon, Ohio</i>
UDS-X-TSR-001	<i>Technical Safety Requirements for the Department of Energy X-745C, X-745E, and X-745G-1 UF₆ Cylinder Storage Yards, Piketon, Ohio</i>

Document No.	Document Title
DUF6-C-G-EMH-001	<i>Emergency Planning Hazards Assessment for the Paducah DOE C-745 Cylinder Storage Yards</i>
DUF6-X-G-EMH-001	<i>Emergency Planning Hazards Assessment for the X-745C, X-745E, and X-745G Cylinder Storage Yards Portsmouth Gaseous Diffusion Plant</i>
UDS-U-CYP-0010	<i>Paducah and Portsmouth UF6 Cylinder Storage Yard Management</i>
UDS-U-GFP-0108	<i>Work Control Process</i>
UDS-GFP-109	<i>Management of Fleet Vehicles</i>
UDS-HRP-001	<i>Human Resources Policy Manual</i>
UDS-HRP-002	<i>Training Procedure</i>
UDS-HRP-007	<i>Employee Concerns</i>
UDS-QAP-004	<i>Graded Approach</i>
UDS-U-QAP-0005	<i>Condition Reporting</i>
UDS-U-QAP-0012	<i>Independent Assessments</i>
UDS-U-QAP-0013	<i>Management Assessments</i>
UDS-U-QAP-0014	<i>Supplier Quality Program Evaluation</i>
UDS-U-QAP-0015	<i>PAAA Reporting Procedure</i>
UDS-U-QAP-0016	<i>Occurrence Reporting</i>
UDS-U-QAP-0017	<i>Lessons Learned</i>
UDS-QAP-018	<i>Root Cause Analysis</i>
UDS-U-QAP-0019	<i>Trending</i>
UDS-QAP-022	<i>Stop Work</i>
UDS-U-QAP-0029	<i>Initial Event Notification</i>
UDS-C-SHP-0212	<i>Paducah Lockout/Tagout</i>
UDS-X-SHP-0214	<i>Portsmouth Lockout/Tagout</i>
UDS-SHP-101	<i>Safety Concerns</i>
UDS-SHP-102	<i>General Requirements</i>
UDS-SHP-103	<i>Safety Surveillances</i>
UDS-SHP-104	<i>CAIRS Reporting Procedure</i>
UDS-SHP-307	<i>Preparation/Maintenance of Hazards Surveys, Emergency Management Planning Hazards Assessments, and Emergency Action Level Development</i>
UDS-SHP-202	<i>Excavations and Surface Penetrations</i>
UDS-SHP-203	<i>Hoisting and Rigging</i>
UDS-SHP-204	<i>Fall Protection</i>
UDS-SHP-205	<i>Emergency Showers and Eyewash</i>
UDS-SHP-206	<i>Aerial Lifts, Articulating Booms, and Elevating Work Platforms</i>
UDS-SHP-207	<i>Material Handling, Storage, and Disposal</i>
UDS-U-SHP-0208	<i>Safety Signs, Color Codes, Barriers, and Defective Tagging</i>
UDS-SHP-209	<i>Temporary Facilities</i>
UDS-SHP-210	<i>Personal Protective Equipment</i>
UDS-U-SHP-0211	<i>Hazard Assessment</i>
UDS-SHP-213	<i>Powered Industrial Trucks (Fork Lifts)</i>
UDS-U-SHP-0214	<i>UDS Electrical Safety Program</i>
UDS-U-SHP-0215	<i>Working On or Near Energized Electrical Components</i>
UDS-U-SHP-0301	<i>Accident/Incident Reporting</i>
UDS-SHP-302	<i>Emergency Program Administration</i>
UDS-SHP-303	<i>Portsmouth Facility Emergency Action Plan</i>
UDS-U-SHP-0305	<i>Event Investigation and Critiques</i>
UDS-SHP-306	<i>Hazardous Waste Operation and Emergency Response Training</i>
UDS-SHP-307	<i>Preparation/Maintenance of Hazards Surveys, Emergency Planning Hazards Assessments, and Emergency Action Level Development</i>

Document No.	Document Title
UDS-SHP-308	<i>Paducah – DOE Operational Emergencies</i>
UDS-SHP-310	<i>Paducah – Emergency Public Information</i>
UDS-SHP-311	<i>Recovery from Emergency</i>
UDS-SHP-312	<i>Paducah – Emergency Management Center</i>
UDS-U-SHP-0501	<i>Occupational Medicine</i>
UDS-U-SHP-0502	<i>Hearing Conservation/Noise Monitoring</i>
UDS-SHP-503	<i>Bloodborne Pathogens Program</i>
UDS-U-SHP-0504	<i>Respiratory Protection/Fit Testing</i>
UDS-U-SHP-0505	<i>Exposure Assessments</i>
UDS-SHP-508	<i>Ergonomics</i>
UDS-SHP-510	<i>Embryo/Fetus Protection</i>
UDS-SHP-511	<i>Biological Monitoring for Industrial Chemicals</i>
UDS-U-SHP-0512	<i>Confined Space Program</i>
UDS-SHP-514	<i>Temperature Extremes</i>
UDS-U-SHP-0601	<i>Hazard Communication Program</i>
UDS-SHP-801	<i>Hot Work</i>
UDS-SHP-803	<i>Fire Evacuation Alarms and Good Housekeeping</i>
UDS-SHP-804	<i>Fire Extinguishers, Inspections, and Maintenance</i>
UDS-SHP-806	<i>Fire Hazards Analysis</i>
UDS-SHP-808	<i>Fire Protection Engineering Assessment Procedure</i>
UDS-SHP-810	<i>Control of Combustion and Ignition Sources</i>
UDS-U-NSP-0002	<i>Unreviewed Safety Questions</i>
UDS-SSP-001	<i>Security Concerns and Fire Events</i>
UDS-U-TRN-0001	<i>Training and Qualification</i>
UDS-WMP-001	<i>Waste Characterization Procedure</i>

NOTE: The most current list of document titles and numbers are maintained/available in the Master Index (electronic document management system – Documentum). This list of document titles and numbers identified in Attachment C is a representation of WSHP implementing documents, but is not intended to be an all-inclusive list.

Attachment D

DUF6 Conversion Project

Crosswalk of 10 CFR 851 Requirements to UDS Implementing Documents

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.10	General requirements		
851.10(a)	<p>With respect to a covered workplace for which a contractor is responsible, the contractor must:</p> <p>(1) Provide a place of employment that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers; and</p> <p>(2) Ensure that work is performed in accordance with:</p> <p>(2)(i) All applicable requirements of this part; and</p> <p>(2)(ii) With the worker safety and health program for that workplace.</p>	Yes	<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Executive Summary ○ DUF6-UDS-PLN-074, <i>Worker Safety and Health Program</i> – Executive Summary ○ ES&H Policy Statement ○ Fire Protection Policy Statement
851.10(b)	The written worker safety and health program must describe how the contractor complies with the:		See below:
851.10(b)	(1) Requirements set forth in Subpart C of this part that are applicable to the hazards associated with the contractor's scope of work; and	Yes	<ul style="list-style-type: none"> ○ WSHP, general and Attachment D ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, general as it pertains to construction
851.10(b)	(2) Any compliance order issued by the Secretary pursuant to § 851.4.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.3

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.11	Development and approval of the worker safety and health program		
851.11(a)	<i>Preparation and submission of worker safety and health program.</i> By February 26, 2007, contractors must submit to the appropriate Head of DOE Field Element for approval a written worker safety and health program that provides the methods for implementing the requirements of Subpart C of this part.	Yes	<ul style="list-style-type: none"> ○ WSHP ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i> ○ DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>
851.11(a)	(1) If a contractor is responsible for more than one covered workplace at a DOE site, the contractor must establish and maintain a single worker safety and health program for the covered workplaces for which the contractor is responsible.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 1
851.11(a)	(2) If more than one contractor is responsible for covered workplaces, each contractor must:	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.5
851.11(a)	(2)(i) Establish and maintain a worker safety and health program for the workplaces for which the contractor is responsible; and	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.5
851.11(a)	(2)(ii) Coordinate with the other contractors responsible for work at the covered workplaces to ensure that there are clear roles, responsibilities, and procedures to ensure the safety and health of workers at multi-contractor workplaces.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.5 ○ Section H-27, Site Services, of DOE Contract No. DE-AC05-02OR22717 <p>Other non-UDS applicable documents</p> <ul style="list-style-type: none"> ○ “Lease Agreement” between DOE and USEC ○ “USEC and DOE Resolution of Shared Site issues at the Gaseous Diffusion Sites”
851.11(a)	(3) The worker safety and health program must describe how the contractor will:	Yes	See below

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.11(a)	(3)(i) Comply with the requirements set forth in Subpart C of this part that are applicable to the covered workplace, including the methods for implementing those requirements; and	Yes	<ul style="list-style-type: none"> ○ WSHP, general ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i> ○ DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>
851.11(a)	(3)(ii) Integrate the requirements set forth in Subpart C of this part that are applicable to a covered workplace with other related site-specific worker protection activities and with the integrated safety management system.	Yes	<ul style="list-style-type: none"> ○ WSHP ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i> ○ DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>
851.11(b)	<i>DOE evaluation and approval.</i> The Head of DOE Field Element must complete a review and provide written approval of the contractor's worker safety and health program, within 90 days of receiving the document. The worker safety and health program and any updates are deemed approved 90 days after submission if they are not specifically approved or rejected by DOE earlier.	NA	
851.11(b)	(1) Beginning May 25, 2007, no work may be performed at a covered workplace unless an approved worker safety and health program is in place for the workplace.	Yes	NA
851.11(b)	(2) Contractors must send a copy of the approved program to the Assistant Secretary for Environment, Safety, and Health.	Yes	NA, will be sent upon approval.
851.11(b)	(3) Contractors must furnish a copy of the approved worker safety and health program, upon written request, to the affected	Yes	NA, will be sent upon approval.

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	workers or their designated representatives.		
851.11(c)	<p><i>Updates.</i></p> <p>(1) Contractors must submit an update of the worker safety and health program to the appropriate Head of DOE Field Element, for review and approval whenever a significant change or addition to the program is made, or a change in contractors occurs.</p> <p>(2) Contractors must submit annually to DOE either an updated worker safety and health program for approval or a letter stating that no changes are necessary in the currently approved worker safety and health program.</p> <p>(3) Contractors must incorporate in the worker safety and health program any changes, conditions, or workplace safety and health standards directed by DOE consistent with the requirements of this part and DEAR 970.5204–2, Laws, Regulations and DOE Directives (December 2000) and associated contract clauses.</p>	Yes	WSHP, Introduction
851.11(d)	<p><i>Labor Organizations.</i> If a contractor employs or supervises workers who are represented for collective bargaining by a labor organization, the contractor must:</p> <p>(1) Give the labor organization timely notice of the development and implementation of the worker safety and health program and any updates thereto; and</p>	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.1.7 ○ Paducah DUF6 Plant Contract Between UDS and USW Local 5-550 ○ Paducah DUF6 Plant Contract Between UDS and USW Local 5-689
851.11(d)	(2) Upon timely request, bargain concerning implementation of this part, consistent with the Federal labor laws.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.1.7
851.12	Implementation		

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.12(a)	Contractors must implement the requirements of this part.	Yes	<ul style="list-style-type: none"> WSHP, Executive Summary
851.12(b)	Nothing in this part precludes a contractor from taking any additional protective action that is determined to be necessary to protect the safety and health of workers.	Yes	<ul style="list-style-type: none"> WSHP, Section 9
851.13	Compliance		
851.13(a)	Contractors must achieve compliance with all the requirements of Subpart C of this part, and their approved worker safety and health program no later than May 25, 2007. Contractors may be required to comply contractually with the requirements of this rule before February 9, 2007.	Yes	WSHP, Executive Summary and Introduction
851.13(b)	In the event a contractor has established a written safety and health program, an Integrated Safety Management System (ISMS) description pursuant to the DEAR Clause, or an approved Work Smart Standards (Work Smart Standards) process before the date of issuance of the final rule, the Contractor may use that program, description, or process as the worker safety and health program required by this part if the appropriate Head of the DOE Field Element approves such use on the basis of written documentation provided by the contractor that identifies the specific portions of the program, description, or process, including any additional requirements or implementation methods to be added to the existing program, description, or process, that satisfy the requirements of this part and that provide a workplace as safe and healthful as would be provided by the requirements of this part.	Yes	NA, UDS developed a WSHP.
851.13(c)	Nothing in this part shall be construed to limit or otherwise affect contractual obligations of a contractor to comply with contractual requirements that are not inconsistent with the requirements of	Yes	WSHP, Section 9

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	this part.		
851.20	Management responsibilities and worker rights and responsibilities		
851.20(a)	<i>Management responsibilities.</i> Contractors are responsible for the safety and health of their workforce and must ensure that contractor management at a covered workplace:	Yes	See below
851.20(a)(1)	Establish written policy, goals, and objectives for the worker safety and health program;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.1.2 ○ ES&H Policy Statement ○ Fire Protection Policy Statement ○ DUF6-UDS-LEX-06-02003 Annual ISMS Declaration
851.20(a)(2)	Use qualified worker safety and health staff (e.g., a certified industrial hygienist, or safety professional) to direct and manage the program;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.1.4 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 2.5 and 4.7.7 ○ UDS-U-TRN-0001, <i>Training and Qualification</i>, Section 5.1
851.20(a)(3)	Assign worker safety and health program responsibilities, evaluate personnel performance, and hold personnel accountable for worker safety and health performance;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.1.5 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i>, Table 1-1 Roles and Responsibilities ○ DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i>, Section 3, Roles and Responsibilities ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 1.4 and 4.7.1 ○ UDS-HRP-001, <i>Human Resources Policy Manual</i>, Section 10.1
851.20(a)(4)	Provide mechanisms to involve workers and their elected representatives in the development of the worker safety and	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.1.6 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	health program goals, objectives, and performance measures and in the identification and control of hazards in the workplace;		<p><i>Management System Plan for Design and Construction</i>, Section 3.3</p> <ul style="list-style-type: none"> ○ DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i>, Section 3.3 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 1.4, 4.7.3, 4.7.4, and 4.7.5 ○ UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 5.1.8 ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3.6 <p>UDS-U-SHP-0211 and UDS-VRD-101 require Plan-of-the-Day meetings with workers to discuss S&H.</p>
851.20(a)(5)	Provide workers with access to information relevant to the worker safety and health program;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.2.2 ○ Documentum does and will contain information relevant to the WSHP
851.20(a)(6)	Establish procedures for workers to report without reprisal job-related fatalities, injuries, illnesses, incidents, and hazards and make recommendations about appropriate ways to control those hazards;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.1.8 ○ DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i>, Section 4 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 4.7.1, 4.7.4, and 4.7.5 ○ UDS-SHP-101, <i>Safety Concerns</i> ○ UDS-SHP-102, <i>General Requirements</i>, Section 5 ○ UDS-VRD-103, <i>Safety Concerns</i>, Section 3.2.1 ○ UDS-VRD-106, <i>General Requirements</i>, Sections 3.2.12, 3.3.1, and 3.3.2
851.20(a)(7)	Provide for prompt response to such reports and recommendations;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 3.6.8 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<i>Phase, Section 4.7.1</i> <ul style="list-style-type: none"> UDS-SHP-101, <i>Safety Concerns</i>, Sections 1 and 5.1.4
851.20(a)(8)	Provide for regular communication with workers about workplace safety and health matters;	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.9 UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 5.1.16 UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3.13 <p>UDS-U-SHP-0211 and UDS-VRD-101 require Plan-of-the-Day meetings with workers to discuss S&H.</p> <ul style="list-style-type: none"> UDS-HRP-001, <i>Human Resources Policy Manual</i>, Section 11 DUF6-UDS-PLN-001, Section 3.2.1.2 requires monthly progress reports to DOE that includes S&H. Report is available through Documentum. UDS Safety Incentive Program – Introduced in memo from Tim Forden dated May 17, 2005
851.20(a)(9)	Establish procedures to permit workers to stop work or decline to perform an assigned task because of a reasonable belief that the task poses an imminent risk of death, serious physical harm, or other serious hazard to workers, in circumstances where the workers believe there is insufficient time to utilize normal hazard reporting and abatement procedures; and	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.10 UDS-QAP-022, <i>Stop Work</i> UDS-VRD-104, <i>Suspension of Work (Safety Related)</i>
851.20(a)(10)	Inform workers of their rights and responsibility by appropriate means, including posting the DOE-designated Worker Protection Poster in the workplace where it is accessible to all workers.	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.1.11 UDS-HRP-001, <i>Human Resources Policy Manual</i>, Section 11

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.20(b)	<i>Worker rights and responsibilities.</i> Workers must comply with the requirements of this part, including the worker safety and health program, which are applicable to their own actions and conduct. Workers at a covered workplace have the right, without reprisal, to:	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.2
851.20(b)(1)	Participate in activities described in this section on official time.	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.1.6
851.20(b)(2)	Have access to: <ul style="list-style-type: none"> (i) DOE safety and health publications; (ii) The worker safety and health program for the covered workplace; (iii) The standards, controls, and procedures applicable to the covered workplace; (iv) The safety and health poster that informs the worker of relevant rights and responsibilities; (v) Limited information on any recordkeeping log (OSHA Form 300). Access is subject to Freedom of Information Act requirements and restrictions; and (vi) The DOE Form 5484.3 (the DOE equivalent to OSHA Form 301) that contains the employee's name as the injured or ill worker; 	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.2.2
851.20(b)(3)	Be notified when monitoring results indicate the worker was overexposed to hazardous materials;	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.2.3 UDS-U-SHP-0505, <i>Exposure Assessments</i>, Section 5.2.17 UDS-VRD-504, <i>Exposure Assessments</i>, Section 3.2.6

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.20(b)(4)	Observe monitoring or measuring of hazardous agents and have the results of their own exposure monitoring;	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.2.4 UDS-U-SHP-0505, <i>Exposure Assessments</i>, Section 5.2.17 UDS-VRD-504, <i>Exposure Assessments</i>, Section 3.2.6
851.20(b)(5)	Have a representative authorized by employees accompany the Director or his authorized personnel during the physical inspection of the workplace for the purpose of aiding the inspection. When no authorized employee representative is available, the Director or his authorized representative must consult, as appropriate, with employees on matters of worker safety and health;	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.2.5 DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 4.7.3
851.20(b)(6)	Request and receive results of inspections and accident investigations;	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.2.6 DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 4.7.3 UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 5.1.16 UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3.13 <p>UDS-U-SHP-0211 and UDS-VRD-101 require Plan-of-the-Day meetings with workers to discuss S&H.</p>
851.20(b)(7)	Express concerns related to worker safety and health;	Yes	<ul style="list-style-type: none"> WSHP, Section 3.6.2.7 DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i>, Section 4 DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 4.7.3, 4.7.4, and 4.7.5 UDS-SHP-101, <i>Safety Concerns</i> UDS-VRD-103, <i>Safety Concerns</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> ○ UDS-VRD-106, <i>General Requirements</i>, Sections 3.2.12, 3.3.1, and 3.3.2
851.20(b)(8)	Decline to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious physical harm to the worker coupled with a reasonable belief that there is insufficient time to seek effective redress through normal hazard reporting and abatement procedures; and	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 3.6.1.10 and 3.6.2.8 ○ DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i>, Section 4 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 4.7.3 and 4.7.4 ○ UDS-SHP-102, <i>General Requirements</i>, Section 5.1.14 ○ UDS-VRD-106, <i>General Requirements</i>, Sections 3.2.12
851.20(b)(9)	Stop work when the worker discovers employee exposures to imminently dangerous conditions or other serious hazards; provided that any stop work authority must be exercised in a justifiable and responsible manner in accordance with procedures established in the approved worker safety and health program.	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 3.6.1.10 and 3.6.2.8 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 2.0, 2.6, 4.7.3, and 4.7.4 ○ UDS-QAP-022, <i>Stop Work</i>, Section 3.1.1 ○ UDS-VRD-104, <i>Suspension of Work (Safety Related)</i>, Section 3.2.1
851.21	Hazard identification and assessment		
851.21(a)	Contractors must establish procedures to identify existing and potential workplace hazards and assess the risk of associated workers injury and illness. Procedures must include methods to:	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 7 ○ UDS-U-SHP-0211, <i>Hazard Assessment</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, ○ UDS-U-QAP-0003, <i>Procedure System</i>
851.21(a)(1)	Assess worker exposure to chemical, physical, biological, or safety workplace hazards through appropriate workplace monitoring;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 7 ○ UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 5.1.2 ○ UDS-U-SHP-0505, <i>Exposure Assessments</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3.3

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> o UDS-VRD-504, <i>Exposure Assessments</i>
851.21(a)(2)	Document assessment for chemical, physical, biological, and safety workplace hazards using recognized exposure assessment and testing methodologies and using of accredited and certified laboratories;	Yes	<ul style="list-style-type: none"> o WSHP, Section 7 o UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 5.1.2 o SHP-505, <i>Exposure Assessments</i>, Section 5.2.8 o UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3.3 o UDS-VRD-504, <i>Exposure Assessments</i>, Section 3.2.5
851.21(a)(3)	Record observations, testing and monitoring results;	Yes	<ul style="list-style-type: none"> o WSHP, Section 7 o UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 6 o SHP-505, <i>Exposure Assessments</i>, Section 6 o UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 5 o UDS-VRD-504, <i>Exposure Assessments</i>, Section 5
851.21(a)(4)	Analyze designs of new facilities and modifications to existing facilities and equipment for potential workplace hazards;	Yes	<ul style="list-style-type: none"> o WSHP, Section 7 o DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Section 2.3
851.21(a)(5)	Evaluate operations, procedures, and facilities to identify workplace hazards;	Yes	<ul style="list-style-type: none"> o WSHP, Section 7 o DUF6-C-G-PSA-001, <i>Paducah DUF6 Conversion Facility Preliminary Documented Safety Analysis</i> o DUF6-X-G-PSA-001, <i>Portsmouth DUF6 Conversion Facility Preliminary Documented Safety Analysis</i> o DUF6-C-F-FHA-001, <i>Preliminary Fire Hazards Analysis Paducah DUF6 Conversion Facility</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> ○ DUF6-X-F-FHA-001, <i>Preliminary Fire Hazards Analysis Portsmouth DUF6 Conversion Facility</i> ○ UDS-SHP-307, <i>Preparation/Maintenance of Hazards Surveys, Emergency Management Planning Hazards Assessments, and Emergency Action level Development</i> ○ DUF6-C-G-EMH-001, <i>Emergency Planning Hazards Assessment for the Paducah DOE C-745 Cylinder Storage Yards</i> ○ DUF6-X-G-EMH-001, <i>Emergency Planning Hazards Assessment for the X-745C, X-745E, and X-745G Cylinder Storage Yards Portsmouth Gaseous Diffusion Plant</i> ○ UDS-U-SHP-0211, <i>Hazard Assessment</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control,</i>
851.21(a)(6)	Perform routine job activity-level hazard analyses;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 7 ○ UDS-U-SHP-0211, <i>Hazard Assessment</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control, Section 3.3.3.3</i>
851.21(a)(7)	Review site safety and health experience information; and	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 7 ○ UDS-U-QAP-0016, <i>Occurrence Reporting</i> ○ UDS-U-QAP-0017, <i>Lessons Learned</i> ○ UDS-SHP-104, <i>CAIRS Reporting Procedure</i>
851.21(a)(8)	Consider interaction between workplace hazards and other hazards such as radiological hazards.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 7 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase, Sections 3.2.1 and 6.1.28</i> ○ UDS-U-GFP-0108, <i>Work Control Process, Section 5.8.5</i> ○ DUF6-UDS-PLN-007, <i>Radiation Protection</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<i>Program</i>
851.21(b)	Contractors must submit to the Head of DOE Field Element a list of closure facility hazards and the established controls within 90 days after identifying such hazards.	No	NA
	The Head of DOE Field Element, with concurrence by the Cognizant Secretarial Officer, has 90 days to accept the closure facility hazard controls or direct additional actions to either: (1) Achieve technical compliance; or (2) Provide additional controls to protect the workers.	No	NA
851.21(c)	Contractors must perform the activities identified in paragraph (a) of this section, initially to obtain baseline information and as often thereafter as necessary to ensure compliance with the requirements in this Subpart.	Yes	This has been performed through the GAP analysis and the utilization of following existing documents for Activity Hazard Analysis preparation. <ul style="list-style-type: none"> ○ UDS-U-SHP-0211, <i>Hazard Assessment</i>, ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i> ○ UDS-U-GFP-0108, <i>Work Control Process</i>
851.22	Hazard prevention and abatement		
851.22(a)	Contractors must establish and implement a hazard prevention and abatement process to ensure that all identified and potential hazards are prevented or abated in a timely manner.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 8 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i>, Sections 4.2, 4.3, and 5.6 ○ DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i>, Sections 4.2 and 4.3 ○ UDS-U-SHP-0211, <i>Hazard Assessment</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i> ○ UDS-U-GFP-0108, <i>Work Control Process</i> ○ DUF6-X-G-PSA-001, <i>Portsmouth DUF6 Conversion Facility Preliminary Documented Safety Analysis</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> ○ DUF6-C-F-FHA-001, <i>Preliminary Fire Hazards Analysis Paducah DUF6 Conversion Facility</i> ○ DUF6-X-F-FHA-001, <i>Preliminary Fire Hazards Analysis Portsmouth DUF6 Conversion Facility</i> ○ UDS-SHP-307, <i>Preparation/Maintenance of Hazards Surveys, Emergency Management Planning Hazards Assessments, and Emergency Action level Development</i> ○ DUF6-C-G-EMH-001, <i>Emergency Planning Hazards Assessment for the Paducah DOE C-745 Cylinder Storage Yards</i> ○ DUF6-X-G-EMH-001, <i>Emergency Planning Hazards Assessment for the X-745C, X-745E, and X-745G Cylinder Storage Yards Portsmouth Gaseous Diffusion Plant</i>
851.22(a)(1)	For hazards identified either in the facility design or during the development of procedures, controls must be incorporated in the appropriate facility design or procedure.	Yes	<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i>
851.22(a)(2)	<p>For existing hazards identified in the workplace, contractors must:</p> <ul style="list-style-type: none"> (iii) Prioritize and implement abatement actions according to the risk to workers; (iv) Implement interim protective measures pending final abatement; and (v) Protect workers from dangerous safety and health conditions; 	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 8 <p>This has been performed through the Plan-of-the-Day meetings identified utilized in following existing documents for Activity Hazard Analysis preparation.</p> <ul style="list-style-type: none"> ○ UDS-U-SHP-0211, <i>Hazard Assessment</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i> ○ UDS-U-GFP-0108, <i>Work Control Process</i>
851.22(b)	Contractors must select hazard controls based on the following hierarchy:	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 8 ○ DUF6-UDS-PLN-041, <i>Environmental,</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	(1) Elimination or substitution of the hazards where feasible and appropriate; (2) Engineering controls where feasible and appropriate; (3) Work practices and administrative controls that limit worker exposures; and (4) Personal protective equipment.		<i>Safety, and Health Plan – Construction Phase, Section 1.2.1</i>
851.22(c)	Contractors must address hazards when selecting or purchasing equipment, products, and services.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 8 ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.3 and 2.4.12 (Design evaluates hazards for selection/procurement of equipment) ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase, Section 1.2.1</i> ○ UDS-PRP-001, <i>Offeror's List</i> (Process to select qualified vendors) ○ UDS-U-SHP-0601, <i>Hazard Communication Program</i>, Section 5.1.4.6 ○ UDS-VRD-601, <i>Hazard Communication</i>, Appendix B
851.23	Safety and health standards		
851.23(a)	Contractors must comply with the following safety and health standards that are applicable to the hazards at their covered workplace:	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 9 and Attachment D ○ DUF6-G-RGN-006, <i>Work Smart Standards Final Report</i> ○ DOE Contract No. DE-AC05-02OR22717
851.23(a)(1)	Title 10 Code of Federal Regulations (CFR) 850, "Chronic Beryllium Disease Prevention Program."	No	<ul style="list-style-type: none"> ○ WSHP, Section 9 and Attachment D Standard is not applicable to UDS.

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.23(a)(2)	Title 29 CFR, Parts 1904.4 through 1904.11, 1904.29 through 1904.33; 1904.44, and 1904.46, "Recording and Reporting Occupational Injuries and Illnesses."	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 9 and Attachment D ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 9.1 ○ UDS-U-QAP-0029, <i>Initial Event Notification</i> ○ UDS-U-SHP-0301, <i>Accident/Incident Reporting</i> ○ UDS-U-SHP-0305, <i>Event Investigation and Critiques</i>
851.23(a)(3)	Title 29 CFR, Part 1910, "Occupational Safety and Health Standards," excluding 29 CFR 1910.1096, "Ionizing Radiation."	Yes	<ul style="list-style-type: none"> ○ WSHP, Attachment D ○ DUF6-UDS-PLN-040, <i>Integrated Safety Management System Plan for Operations</i>,
851.23(a)(4)	29 CFR 1915, "Shipyard Employment."	No	<ul style="list-style-type: none"> ○ WSHP, Section 9 and Attachment D <p>Standard is not applicable to UDS.</p>
851.23(a)(5)	29 CFR 1917, "Marine Terminals."	No	<ul style="list-style-type: none"> ○ WSHP, Section 9 and Attachment D <p>Standard is not applicable to UDS.</p>
851.23(a)(6)	29 CFR 1918, "Safety and Health Regulations for Longshoring."	No	<ul style="list-style-type: none"> ○ WSHP, Section 9 and Attachment D <p>Standard is not applicable to UDS.</p>
851.23(a)(7)	29 CFR 1926, "Safety and Health Regulations for Construction."	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 9 and Attachment D ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>,
851.23(a)(8)	29 CFR 1928, "Occupational Safety and Health Standards for Agriculture."	No	<ul style="list-style-type: none"> ○ WSHP, Section 9 and Attachment D <p>Standard is not applicable to UDS.</p>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.23(a)(9)	American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices," (2005) (incorporated by reference, see § 851.27) when the ACGIH Threshold Limit Values (TLVs) are lower (more protective) than permissible exposure limits in 29 CFR 1910. When the ACGIH TLVs are used as exposure limits, contractors must nonetheless comply with the other provisions of any applicable expanded health standard found in 29 CFR 1910.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 13.3 and Attachment D ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 5.2.2 and 9.1 ○ UDS-U-SHP-0505, <i>Exposure Assessments</i> ○ UDS-VRD-504, <i>Exposure Assessments</i>
851.23(a)(10)	American National Standards Institute (ANSI) Z88.2, "American National Standard for Respiratory Protection," (1992) (incorporated by reference, see § 851.27).	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 13.3 and Attachment D ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 9.1 ○ UDS-U-SHP-0504, <i>Respiratory Protection/Fit Testing</i> ○ UDS-VRD-503, <i>Respiratory Protection</i>
851.23(a)(11)	ANSI Z136.1, "Safe Use of Lasers," (2000) (incorporated by reference, see § 851.27).	Yes	<ul style="list-style-type: none"> ○ UDS-VRD-505, <i>Lasers</i>
851.23(a)(12)	ANSI Z49.1, "Safety in Welding, Cutting and Allied Processes" section 4.3 and E4.3 (1999) (incorporated by reference, see § 851.27).	Yes	<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 6.1.7 and 9.2 ○ UDS-CMP-040, <i>Hot Work</i> ○ UDS-SHP-801, <i>Hot Work</i>
851.23(a)(13)	National Fire Protection Association (NFPA) 70, "National Electrical Code," (2005) (incorporated by reference, see § 851.27).	Yes	<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i>
851.23(a)(14)	NFPA 70E, "Standard for Electrical Safety in the Workplace," (2004) (incorporated by reference, see § 851.27).	Yes	<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 6.1.4 and 9.2 ○ UDS-U-SHP-0214, <i>UDS Electrical Safety Program</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> ○ UDS-U-SHP-0215, <i>Working On or Near Energized Electrical Components</i>
851.23(b)	Nothing in this part must be construed as relieving a contractor from complying with any additional specific safety and health requirement that it determines to be necessary to protect the safety and health of workers.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 9
851.24	Functional areas		
851.24(a)	Contractors must have a structured approach to their worker safety and health program which at a minimum, include provisions for the following applicable functional areas in their worker safety and health program: construction safety; fire protection; firearms safety; explosives safety; pressure safety; electrical safety; industrial hygiene; occupational medicine; biological safety; and motor vehicle safety.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10
851.24(b)	In implementing the structured approach required by paragraph (a) of this section, contractors must comply with the applicable standards and provisions in Appendix A of this part, entitled "Worker Safety and Health Functional Areas."	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10
851.25	Training and information		

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.25(a)	Contractors must develop and implement a worker safety and health training and information program to ensure that all workers exposed or potentially exposed to hazards are provided with the training and information on that hazard in order to perform their duties in a safe and healthful manner.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 11 ○ DUF6-UDS-PLN-027, <i>Training Plan</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 7 ○ UDS-U-TRN-0001, <i>Training and Qualification</i>, Section 5.9 ○ UDS-VRD-102, <i>Training and Indoctrination</i>, Section 3.1.11, and 3.1.12
851.25(b)	The contractor must provide:		See below:
851.25(b)(1)	Training and information for new workers, before or at the time of initial assignment to a job involving exposure to a hazard;	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 11.2, 11.4, and 11.5 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 7.1, 7.11, and 7.12 ○ UDS-U-TRN-0001, <i>Training and Qualification</i>, Sections 4.23, 4.24, and 5.9.2 ○ UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 5.2.1 ○ UDS-VRD-102, <i>Training and Indoctrination</i>, Section 3.1.4
851.25(b)(2)	Periodic training as often as necessary to ensure that workers are adequately trained and informed; and	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 11.4 and 11.5 ○ UDS-U-TRN-0001, <i>Training and Qualification</i>, Section 5.9.2 ○ UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 5.2.1 ○ UDS-VRD-102, <i>Training and Indoctrination</i>, Section 3.1.14
851.25(b)(3)	Additional training when safety and health information or a change in workplace conditions indicates that a new or increased hazard exists.	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 11.4 and 11.5 ○ UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 5.2.5

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	increased hazard exists.		<ul style="list-style-type: none"> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3.1 ○ UDS-VRD-102, <i>Training and Indoctrination</i>, Section 3.1.14
851.25(c)	Contractors must provide training and information to workers who have worker safety and health program responsibilities that is necessary for them to carry out those responsibilities.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 11.6 ○ DUF6-UDS-PLN-027, <i>Training Plan</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 7 ○ UDS-U-TRN-0001, <i>Training and Qualification</i>, Section 5.9 ○ UDS-VRD-102, <i>Training and Indoctrination</i>, Section 3.1.11, and 3.1.12
851.26	Recordkeeping and reporting		
851.26(a)	<i>Recordkeeping.</i> Contractors must:		See Below:
851.26(a)(1)	Establish and maintain complete and accurate records of all hazard inventory information, hazard assessments, exposure measurements, and exposure controls.	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 12.1 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 3.3 ○ UDS-U-DMP-0002, <i>Records Management Program</i> ○ UDS-U-SHP-0211, <i>Hazard Assessment</i>, Section 6 ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 5
851.26(a)(2)	Ensure that the work-related injuries and illnesses of its workers and subcontractor workers are recorded and reported accurately and consistent with DOE Manual 231.1-1A, <i>Environment, Safety and Health Reporting Manual</i> , September 9, 2004 (incorporated by reference, see §851.27).	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 12.2 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 3.2, 3.3., 3.4, 3.5, and 9.1 ○ UDS-U-SHP-0301, <i>Accident/Incident Reporting</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> o UDS-U-QAP-0029, <i>Initial Event Notification</i>
851.26(a)(3)	Comply with the applicable to occupational injury and illness recordkeeping and reporting workplace safety and health standards in § 851.23 of this part at their site, unless otherwise directed in DOE Manual 231.1-1A.	Yes	<ul style="list-style-type: none"> o WSHP, Sections 12.2 o DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 3.2, 3.3., 3.4, 3.5, and 9.1 o UDS-SHP-104, <i>CAIRS Reporting Procedure</i> o UDS-U-SHP-0301, <i>Accident/Incident Reporting</i>
851.26(a)(4)	Not conceal nor destroy any information concerning non-compliance or potential noncompliance with the requirements of this part.	Yes	<ul style="list-style-type: none"> o WSHP, Section 12 o DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 3.3.4
851.26(b)	<i>Reporting and investigation.</i> Contractors must:	Yes	See Below:
851.26(b)(1)	Report and investigate accidents, injuries and illnesses; and	Yes	<ul style="list-style-type: none"> o WSHP, Sections 12.2 o DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 3.2, 3.3., 3.4 and 3.5 o UDS-U-SHP-0301, <i>Accident/Incident Reporting</i> o UDS-U-SHP-0305, <i>Event Investigation and Critiques</i>
851.26(b)(2)	Analyze related data for trends and lessons learned (reference DOE Order 225.1A, <i>Accident Investigations</i> , November 26, 1997).	Yes	<ul style="list-style-type: none"> o WSHP, Sections 12.3 o DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 2.2 o UDS-U-QAP-0017, <i>Lessons Learned</i> o UDS-U-QAP-0019, <i>Trending</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
851.27	Reference Sources		
27(a)	<p>Materials incorporated by reference.</p> <p>(1) General. The following standards that are not otherwise set forth in part 851 are incorporated by reference and made a part of part 851. The standards listed in this section have been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.</p> <p>(2) <i>Availability of standards.</i> The standards incorporated by reference are available for inspection at:</p> <p>(2)(i) National Archives and Records Administration (NARA). For more information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html</p> <p>(2)(ii) U.S. Department of Energy, Office of Environment, Safety and Health, Forrestal Building, 1000 Independence Ave., SW., Washington, DC 20585.</p> <p>(2)(iii) American National Standards Institute Headquarters, 25 West 43rd Street, New York, NY 10036. Telephone number: 12-642-4980, or go to: http://www.ansi.org.</p> <p>(2)(iv) National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169. Telephone: 617 770-3000, or go to: http://www.nfpa.org.</p> <p>(2)(v) American Conference of Governmental Industrial Hygienist (ACGIH), 1330 Kemper Meadow Drive, Cincinnati, OH 45240. Telephone number 513-742-2020, or go to:</p>	Yes	<ul style="list-style-type: none"> o WSHP, Attachment D

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	http://www.acgih.org . (2)(vi) American Society of Mechanical Engineers (ASME), P.O. Box 2300 Fairfield, NJ 07007. Telephone: 800-843-2763, or go to: http://www.asme.org .		
27(b)	<i>List of standards incorporated by reference.</i>		See Below
27(b)	(1) American National Standards Institute (ANSI) Z88.2, "American National Standard Practices for Respiratory Protection," (1992).	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 9.1 ○ UDS-U-SHP-0504, <i>Respiratory Protection Program</i> ○ UDS-VRD-503, <i>Respiratory Protection</i>
27(b)	(2) ANSI Z136.1, "Safe Use of Lasers," (2000).	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D ○ UDS-VRD-505, <i>Lasers</i>
27(b)	(3) ANSI Z49.1, "Safety in Welding, Cutting and Allied Processes," (1999).	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 6.1.7 and 9.2 ○ UDS-CMP-039, <i>Hot Work</i> ○ UDS-SHP-801, <i>Hot Work</i>
27(b)	(4) National Fire Protection Association (NFPA) 70, "National Electrical Code," (2005).	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 ○ In Electrical Installation Specification.
27(b)	(5) NFPA 70E, "Electrical Safety in the Workplace," (2004).	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 6.1.4 and 9.2 ○ UDS-SHP-0214, <i>UDS Electrical Safety Program</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> o UDS-U-SHP-0215, <i>Working On or Near Energized Electrical Components</i>
27(b)	(6) American Conference of Governmental Industrial Hygienists, "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices," (2005).	Yes	<ul style="list-style-type: none"> o WSHP, Sections 13.3 and Attachment D o UDS-U-SHP-0505, <i>Exposure Assessments</i> o UDS-VRD-504, <i>Exposure Assessments</i>
27(b)	(7) American Society of Mechanical Engineers (ASME) Boilers & Pressure Vessel Code, sections I through XII including applicable Code Cases, (2004)	Yes	<ul style="list-style-type: none"> o WSHP, Sections 13.3 and Attachment D o DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 o In Piping Specifications.
27(b)	(8) ASME B31 (ASME Code for Pressure Piping) as follows:	Yes	<ul style="list-style-type: none"> o WSHP, Sections 13.3 and Attachment D o In Piping Installation Spec. there is reference to ASME Section I, which for piping design sends you to ASME B31.1.
27(b)	(8)(i) B31.1—2001—Power Piping, and B31.1a—2002—Addenda to ASME B31.1—2001;	No	<ul style="list-style-type: none"> o WSHP, Sections 13.3 and Attachment D
27(b)	(8)(ii) B31.2—1968—Fuel Gas Piping;	Yes	<ul style="list-style-type: none"> o WSHP, Sections 13.3 and Attachment D o DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 o In Piping Specifications.
27(b)	(8)(iii) B31.3—2002—Process Piping;	Yes	<ul style="list-style-type: none"> o WSHP, Sections 13.3 and Attachment D o DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 o In Piping Specifications.
27(b)	(8)(iv) B31.4—2002—Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids;	No	<ul style="list-style-type: none"> o WSHP, Sections 13.3 and Attachment D
27(b)	(8)(v) B31.5—2001—Refrigeration Piping and Heat Transfer Components, and B31.5a—2004, Addenda to ASME B31.5—2001;	No	<ul style="list-style-type: none"> o WSHP, Sections 13.3 and Attachment D

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
27(b)	(8)(vi) B31.8—2003—Gas Transmission and Distribution Piping Systems;	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 ○ In Piping Specifications.
27(b)	(8)(vii) B31.8S—2001—Managing System Integrity of Gas Pipelines;	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 ○ In Piping Specifications.
27(b)	(8)(viii) B31.9—1996—Building Services Piping;	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 ○ In Piping Specifications.
27(b)	(8)(ix) B31.11—2002—Slurry Transportation Piping Systems; and	No	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D
27(b)	(8)(x) B31G—1991—Manual for Determining Remaining Strength of Corroded Pipelines.	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D <p>Note: Will be addressed in conversion facility maintenance procedures.</p>
27(b)	(9) DOE Manual 231.1-1A, Environment, Safety and Health Reporting Manual, September 9, 2004.	Yes	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D ○ UDS-U-SHP-0301
27(b)	(10) DOE Manual 440.1-1A, DOE Explosives Safety Manual, Contractor Requirements Document (Attachment 2), January 9, 2006.	No	<ul style="list-style-type: none"> ○ WSHP, Sections 13.3 and Attachment D

Attachment D

DUF6 Conversion Project

Crosswalk of 10 CFR 851 Requirements to UDS Implementing Documents

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
Appendix A	General Requirements Worker Safety and Health Functional Areas		
Appendix A-1	Construction Safety		
App A.1(a)	For each separately definable construction activity (e.g., excavations, foundations, structural steel, roofing) the construction contractor must:	Yes	See below:
App A.1(a)	(1) Prepare and have approved by the construction manager an activity hazard analysis prior to commencement of affected work. Such analyses must:	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.1 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 3.2 and 3.2.1 ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3.1
App A.1(a)	(1)(i) Identify foreseeable hazards and planned protective measures;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.1 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i>, Sections 4.2 and 4.3 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 3.2 ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3
App A.1(a)	(1)(ii) Address further hazards revealed by supplemental site information (e.g., site characterization data, as-built drawings) provided by the construction manager;	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.1 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3 ○ UDS-CMP-041, <i>Excavations and Surface Penetrations</i>, Section 6
App A.1(a)	(1)(iii) Provide drawings and/or other documentation of protective measures for which applicable Occupational Safety and health Administration (OSHA) standards require preparation by a Professional engineer or other qualified professional, and	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.1 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i> ○ UDS-VRD-203, <i>Concrete and Masonry</i> ○ UDS-VRD-207, <i>Steel Erection</i> ○ UDS-VRD-208, <i>Excavations/Penetrations</i>
App A.1(a)	(1)(iv) Identify competent persons required for workplace inspections of the construction activity, where required by OSHA standards.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.1 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 2.5, 7.5, ○ UDS-CMP-041, <i>Excavations and Surface Penetrations</i>, Section 3.2.2 ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3.3
App A.1(a)	(2) Ensure workers are aware of foreseeable hazards and the protective measures described within the activity analysis prior to beginning work on the affected activity.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.1 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3
App A.1(a)	(3) Require that workers acknowledge being informed of the hazards and protective measures associated with assigned work activities. Those workers failing to utilize appropriate protective measures must be subject to the construction contractor's disciplinary process.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.1 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Sections 1.4 and 4.7.1 ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i>, Section 3.3
App A.1(b)	During periods of active construction (i.e., excluding weekends, weather delays, or other periods of work inactivity), the construction contractor must have a designated representative on the construction worksite who is knowledgeable of the project's hazards and has full authority to Act on behalf of the construction contractor. The contractor's designated representative must make frequent and regular inspections of the construction worksite to identify and correct any instances of noncompliance with project safety and health requirements.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.1 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 4.7.6
App A.1(c)	Workers must be instructed to report to the construction contractor's designated representative, hazards not previously identified or evaluated. If immediate corrective action is not possible or the hazard falls outside of project scope, the construction contractor must immediately notify affected workers, post appropriate warning signs, implement needed interim control measures, and notify the construction manager of the action taken. The contractor or the designated representative must stop work in the affected area until appropriate protective measures are established.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.1 ○ DUF6-UDS-PLN-006, <i>Integrated Safety Management System Plan for Design and Construction</i> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 4.7.4 ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i> ○ UDS-VRD-103, <i>Safety Concerns</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<ul style="list-style-type: none"> ○ UDS-VRD-104, <i>Suspension of Work (Safety Related)</i>
App A.1(d)	The construction contractor must prepare a written construction project safety and health plan to implement the requirements of this section and obtain approval of the plan by the construction manager prior to commencement of any work covered by the plan. In the plan, the contractor must designate the individual(s) responsible for on-site implementation of the plan, specify qualifications for those individuals, and provide a list of those project activities for which subsequent hazard analyses are to be performed. The level of detail within the construction project safety and health plan should be commensurate with the size, complexity and risk level of the construction project. The content of this plan need not duplicate those provisions that were previously submitted and approved as required by § 851.11.	Yes	<ul style="list-style-type: none"> ○ WSHP, General ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>
Appendix A.2	Fire Protection		
App A.2(a)	Contractors must implement a comprehensive fire safety and emergency response program to protect workers commensurate with the nature of the work that is performed. This includes appropriate facility and site-wide fire protection, fire alarm notification and egress features, and access to a fully staffed, trained, and equipped emergency response organization that is capable of responding in a timely and effective manner to site emergencies.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.2 ○ DUF6-UDS-PLN-024, <i>UDS Fire Protection Program Description</i> ○ UDS-VRD-801, <i>Flammable and Combustible Liquid Storage and Compressed Gas</i> ○ UDS-VRD-802, <i>Fire Protection</i>
App A.2(b)	An acceptable fire protection program must include those fire protection criteria and procedures, analyses, hardware apparatus and equipment, and personnel that would comprehensively ensure that the objective in paragraph 2(a) of This includes meeting applicable building codes and National Fire Protection Association codes and standards.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.2 ○ DUF6-UDS-PLN-021, <i>Design Execution Plan, Section 2.3</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
Appendix A.3	Explosives Safety		
App A.3(a)	Contractors responsible for the use of explosive materials must establish and implement a comprehensive explosives safety program.	No	<ul style="list-style-type: none"> WSHP, Section 10.3 and Attachment D
App A.3(b)	Contractors must comply with the policy and requirements specified in the DOE Manual 440.1-1, DOE Explosives Safety Manual, March 29, 1996 (incorporated by reference, see § 851.27). A Contractor may choose a successor version, if approved by DOE.	No	<ul style="list-style-type: none"> WSHP, Section 10.3
App A.3(c)	Contractors must determine the applicability of the explosives safety directive requirements to research and development laboratory type operations consistent with the DOE level of protection criteria described in the explosives safety directive.	No	<ul style="list-style-type: none"> WSHP, Section 10.3
Appendix A.4	Pressure Safety		
App A.4(a)	Contractors must establish safety policies and procedures to ensure that pressure systems are designed, fabricated, tested, inspected, maintained, repaired, and operated by trained and qualified personnel in accordance with applicable and sound engineering principles.		<ul style="list-style-type: none"> WSHP, Section 10.4 UDS-U-CYP-0004, <i>Field Replacement and Repair of Non-Fissile UF₆ Cylinder Valves and Plugs</i>
App A.4(b)	Contractors must ensure that all pressure vessels, boilers, air receivers, and supporting piping systems conform to:	Yes	<ul style="list-style-type: none"> WSHP, Section 10.4 DUF6-UDS-PLN-021, <i>Design Execution</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
			<i>Plan</i> , Sections 2.1 and 2.3 ○ DUF6-UDS-PLN-003, <i>DUF6 Conversion Project Quality Assurance Plan</i> , Section 5.7
App A.4(b)	(1) The applicable American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (2004); sections I through section XII including applicable Code Cases (incorporated by reference, see § 851.27).	Yes	○ WSHP, Section 10.4 and Attachment D ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i> , Sections 2.1 and 2.3 ○ In Piping Specifications.
App A.4(b)	(2) The applicable ASME B31 (Code for Pressure Piping) standards as indicated below; and or as indicated in paragraph (b)(3) of this section:	Yes	○ WSHP, Section 13.3 and Attachment D ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i> , Sections 2.1 and 2.3 ○ In Piping Specifications.
App A.4(b)	(2)(i) B31.1—2001—Power Piping, and B31.1a—2002—Addenda to ASME B31.1— 2001 (incorporated by reference, see § 851.27);	No	○ WSHP, Section 13.3 and Attachment D
App A.4(b)	(2)(ii) B31.2—1968—Fuel Gas Piping (incorporated by reference, see § 851.27);	Yes	○ WSHP, Section 13.3 and Attachment D ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i> , Sections 2.1 and 2.3 ○ In Piping Specifications.
App A.4(b)	(2)(iii) B31.3—2002—Process Piping (incorporated by reference, see § 851.27);	Yes	○ WSHP, Section 13.3 and Attachment D ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i> , Sections 2.1 and 2.3 ○ In Piping Specifications.
App A.4(b)	(2)(iv) B31.4—2002—Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids (incorporated by reference, see § 851.27);	No	○ WSHP, Section 13.3 and Attachment D

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
App A.4(b)	(2)(v) B31.5—2001—Refrigeration Piping and Heat Transfer Components, and B31.5a— 2004, Addenda to ASME B31.5—2001 (incorporated by reference, see § 851.27);	No	<ul style="list-style-type: none"> WSHP, Section 13.3 and Attachment D
App A.4(b)	(2)(vi) B31.8—2003—Gas Transmission and Distribution Piping Systems (incorporated by reference, see § 851.27);	Yes	<ul style="list-style-type: none"> DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 In Piping Specifications.
App A.4(b)	(2)(vii) B31.8S—2001—Managing System Integrity of Gas Pipelines (incorporated by reference, see § 851.27);	Yes	<ul style="list-style-type: none"> DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 In Piping Specifications.
App A.4(b)	(2)(viii) B31.9—1996—Building Services Piping (incorporated by reference, see § 851.27);	Yes	<ul style="list-style-type: none"> WSHP, Section 13.3 and Attachment D DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Sections 2.1 and 2.3 In Piping Specifications.
App A.4(b)	(2)(x) B31G—1991—Manual for Determining Remaining Strength of Corroded Pipelines (incorporated by reference, see § 851.27).	Yes	<p>WSHP, Section 13.3 and Attachment D</p> <p>Note: Will be addressed in maintenance procedures.</p>
	(3) The strictest applicable state and local codes.	Yes	See below:
App A.4(c)	<p>When national consensus codes are not applicable (because of pressure range, vessel geometry, use of special materials, etc.), contractors must implement measures to provide equivalent protection and ensure a level of safety greater than or equal to the level of protection afforded by the ASME or applicable state or local code. Measures must include the following:</p> <p>(1) Design drawings, sketches, and calculations must be reviewed and approved by a qualified independent design professional (i.e., professional engineer). Documented organizational peer review is acceptable.</p>	Yes	<ul style="list-style-type: none"> WSHP, Section 10.4 DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Section 2.3

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	<p>(2) Qualified personnel must be used to perform examinations and inspections of materials, in-process fabrications, nondestructive tests, and acceptance test.</p> <p>(3) Documentation, traceability, and accountability must be maintained for each pressure vessel or system, including descriptions of design, pressure conditions, testing, inspection, operation, repair, and maintenance.</p>		
Appendix A.5	Firearms Safety		
App A.5(a)	<p>A contractor engaged in DOE activities involving the use of firearms must establish firearms safety policies and procedures for security operation, and training to ensure proper accident prevention controls are in place.</p> <p>(1) Written procedures must address firearms safety, engineering and administrative controls, as well as personal protective equipment requirements.</p> <p>(2) As a minimum, procedures must be established for:</p> <p>(i) Storage, handling, cleaning, inventory, and maintenance of firearms and associated ammunition;</p> <p>(ii) Activities such as loading, unloading, and exchanging firearms. These procedures must address use of bullet containment devices and those techniques to be used when no bullet containment device is available;</p> <p>(iii) Use and storage of pyrotechnics, explosives, and/or explosive projectiles;</p>	No	<ul style="list-style-type: none"> ○ WSHP, Section 10.5

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	(iv) Handling misfires, duds, and unauthorized discharges; (v) Live fire training, qualification, and evaluation activities; (vi) Training and exercises using engagement simulation systems; (vii) Medical response at firearms training facilities; and (viii) Use of firing ranges by personnel other than DOE or DOE contractor protective forces personnel.		
App A.5(b)	Contractors must ensure that personnel responsible for the direction and operation of the firearms safety program are professionally qualified and have sufficient time and authority to implement the procedures under this section.	No	<ul style="list-style-type: none"> WSHP, Section 10.5
App A.5(c)	Contractors must ensure that firearms instructors and armorers have been certified by the Safeguards and Security National Training Center to conduct the level of activity provided. Personnel must not be allowed to conduct activities for which they have not been certified.	No	<ul style="list-style-type: none"> WSHP, Section 10.5
App A.5(d)	Contractors must conduct formal appraisals assessing implementation of procedures, personnel responsibilities, and duty assignments to ensure overall policy objectives and performance criteria are being met by qualified personnel.	No	<ul style="list-style-type: none"> WSHP, Section 10.5
App A.5(e)	Contractors must implement procedures related to firearms training, live fire range safety, qualification, and evaluation activities, including procedures requiring that: (1) Personnel must successfully complete initial firearms safety training before being issued any firearms. Authorization to remain in armed status will continue only if the employee	No	<ul style="list-style-type: none"> WSHP, Section 10.5

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	<p>demonstrates the technical and practical knowledge of firearms safety semiannually;</p> <p>(2) Authorized armed personnel must demonstrate through documented limited scope performance tests both technical and practical knowledge of firearms handling and safety on a semi-annual basis;</p> <p>(3) All firearms training lesson plans must incorporate safety for all aspects of firearms training task performance standards. The lesson plans must follow the standards set forth by the Safeguards and Security Central Training Academy's standard training programs;</p> <p>(4) Firearms safety briefings must immediately precede training, qualifications, and evaluation activities involving live fire and/or engagement simulation systems;</p> <p>(5) A safety analysis approved by the Head of DOE Field Element must be developed for the facilities and operation of each live fire range prior to implementation of any new training, qualification, or evaluation activity. Results of these analyses must be incorporated into procedures, lesson plans, exercise plans, and limited scope performance tests;</p> <p>(6) Firing range safety procedures must be conspicuously posted at all range facilities; and</p> <p>(7) Live fire ranges, approved by the Head of DOE Field Element, must be properly sited to protect personnel on the range, as well as personnel and property not associated with the range.</p>		
App A.5(f)	Contractors must ensure that the transportation, handling, placarding, and storage of munitions conform to the applicable DOE requirements.	No	<ul style="list-style-type: none"> ○ WSHP, Section 10.5

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
Appendix A.6	Industrial Hygiene		
App A.6	Contractors must implement a comprehensive industrial hygiene program that includes at least the following elements:	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.6 ○ DUF6-UDS-PLN-021, <i>Design Execution Plan</i>, Section 2.3 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.1 ○ UDS-VRD-501, <i>Disease Control</i> ○ UDS-VRD-502, <i>Hearing Conservation</i> ○ UDS-VRD-503, <i>Respiratory Protection</i> ○ UDS-VRD-504, <i>Exposure Assessments</i> ○ UDS-VRD-505, <i>Lasers</i> ○ UDS-VRD-507, <i>Confined Spaces</i> ○ UDS-VRD-601, <i>Hazard Communication</i> ○ UDS-U-SHP-0501, <i>Occupational Medicine</i> ○ UDS-U-SHP-0502, <i>Hearing Conservation/Noise Monitoring</i> ○ UDS-SHP-503, <i>Bloodborne Pathogens Program</i> ○ UDS-U-SHP-0504, <i>Respiratory Protection Program</i> ○ UDS-U-SHP-0505, <i>Exposure Monitoring</i> ○ UDS-SHP-508, <i>Ergonomics</i> ○ UDS-SHP-510, <i>Embryo/Fetus Protection</i> ○ UDS-SHP-511, <i>Biological Monitoring for Industrial Chemicals</i> ○ UDS-SHP-514, <i>Temperature Extremes</i> ○ UDS-U-SHP-0601, <i>Hazard Communication Program</i>
App A.6(a)	Initial or baseline surveys and periodic resurveys and/or exposure monitoring as appropriate of all work areas or	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.6 ○ DUF6-UDS-PLN-041, <i>Environmental,</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	operations to identify and evaluate potential worker health risks;		<i>Safety, and Health Plan – Construction Phase, Section 5.1</i> ○ UDS-U-SHP-0505, <i>Exposure Assessments</i> ○ UDS-VRD-504, <i>Exposure Assessments, Section 3.2.3</i>
App A.6(b)	Coordination with planning and design personnel to anticipate and control health hazards that proposed facilities and operations would introduce;	Yes	○ WSHP, Section 10.6 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase, Section 5.1</i> ○ DUF6-UDS-PLN-021, <i>Design Execution Plan, Section 2.3</i>
App A.6(c)	Coordination with cognizant occupational medical, environmental, health physics, and work planning professionals;	Yes	○ WSHP, Section 10.6 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase, Section 5.1</i> ○ UDS-U-SHP-0211, <i>Hazard Assessment</i> ○ UDS-U-SHP-0501, <i>Occupational Medicine</i> ○ UDS-U-SHP-0505, <i>Exposure Assessments, Section 5.1.7</i> ○ UDS-VRD-101, <i>Work Coordination and Hazard Control</i> ○ UDS-VRD-504, <i>Exposure Assessment, Section 3.2.1</i>
App A.6(d)	Policies and procedures to mitigate the risk from identified and potential occupational carcinogens;	Yes	○ WSHP, Section 10.6 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase, Section 5.1</i> ○ UDS-U-SHP-0601, <i>Hazard Communication Program</i> ○ UDS-VRD-601, <i>Hazard Communication</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
App A.6(e)	Professionally and technically qualified industrial hygienists to manage and implement the industrial hygiene program; and	Yes	<ul style="list-style-type: none"> WSHP, Section 10.6 DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.1 UDS-U-TRN-001, <i>Training and Qualification</i> UDS-VRD-504, <i>Exposure Assessment</i>, Section 3.2.1 UDS-U-SHP-0505, <i>Exposure Assessments</i>, Section 4
App A.6(f)	Use of respiratory protection equipment tested under the DOE Respirator Acceptance Program for Supplied-air Suits (DOE Technical Standard-1167–2003) when National Institute for Occupational Safety and Health-approved respiratory protection does not exist for DOE tasks that require such equipment. For security operations conducted in accordance with Presidential Decision Directive 39, U.S. POLICY ON COUNTER TERRORISM, use of Department of Defense military type masks for respiratory protection by security personnel is acceptable.	No	NA
Appendix A.7	Biological Safety		
App A.7(a)	<p><i>Contractors must establish and implement a biological safety program that:</i></p> <p>(1) Establishes an Institutional Biosafety Committee (IBC) or equivalent. The IBC must:</p> <p>(i) Review any work with biological etiologic agents for compliance with applicable Center for Disease Control (CDC), National Institutes of Health (NIH), World Health Organization (WHO), and other international, Federal, state, and local guidelines and assess the containment level, facilities, procedures, practices, and training and expertise of personnel;</p>	No	<ul style="list-style-type: none"> WSHP, Section 10.7

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	<p>and</p> <p>(ii) Review the site's security, safeguards, and emergency management plans and procedures to ensure they adequately consider work involving biological etiologic agents.</p> <p>(2) Maintains an inventory and status of biological etiologic agents, and provide to the responsible field and area office, through the laboratory IBC (or its equivalent), an annual status report describing the status and inventory of biological etiologic agents and the biological safety program.</p> <p>(3) Provides for submission to the appropriate Head of DOE Field Element, for review and concurrence before transmittal to the Center for Disease Control (CDC), each Laboratory Registration/Select Agent Program registration application package requesting registration of a laboratory facility for the purpose of transferring, receiving, or handling biological select agents.</p> <p>(4) Provides for submission to the appropriate Head of DOE Field Element, a copy of each CDC Form EA-101, Transfer of Select Agents, upon initial submission of the Form EA-101 to a vendor or other supplier requesting or ordering a biological select agent for transfer, receipt, and handling in the registered facility. Submit to the appropriate Head of DOE Field Element the completed copy of the Form EA-101, documenting final disposition and/or destruction of the select agent, within 10 days of completion of the Form EA-101.</p> <p>(5) Confirms that the site safeguards and security plans and emergency management programs address biological etiologic agents, with particular emphasis on biological select agents.</p> <p>(6) Establishes an immunization policy for personnel working with biological etiologic agents based on the evaluation of risk and benefit of immunization.</p>		
App A.7(b)	[Reserved]	No	

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
Appendix A.8	Occupational Medicine		
App A.8(a)	Contractors must establish and provide comprehensive occupational medicine services to workers employed at a covered work place who: (1) Work on a DOE site for more than 30 days in a 12-month period; or (2) Are enrolled for any length of time in a medical or exposure-monitoring program required by this rule and/or any other applicable Federal, State or local regulation, or other obligation.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.8 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 ○ UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 2
App A.8(b)	The occupational medicine services must be under the direction of a graduate of a school of medicine or osteopathy who is licensed for the practice of medicine in the state in which the site is located.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.8 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 ○ UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 5.1.2
App A.8(c)	Occupational medical physicians, occupational health nurses, physician's assistants, nurse practitioners, psychologists, employee assistance counselors, and other occupational health personnel providing occupational medicine services must be licensed, registered, or certified as required by Federal or State law where employed.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.8 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 ○ UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 5.1.2
App A.8(d)	Contractors must provide the occupational medicine providers access to hazard information by promoting its communication, coordination, and sharing among operating and environment, safety, and health protection organizations.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.8 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	<p>(1) Contractors must provide the occupational medicine providers with access to information on the following:</p> <p>(1)(i) Current information about actual or potential work-related site hazards (chemical, radiological, physical, biological, or ergonomic);</p> <p>(1)(ii) Employee job-task and hazard analysis information, including essential job functions;</p> <p>(1)(iii) Actual or potential work-site exposures of each employee; and</p> <p>(1)(iv) Personnel actions resulting in a change of job functions, hazards or exposures.</p>		<ul style="list-style-type: none"> ○ UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 5.1.1
App A.8(d)	(2) Contractors must notify the occupational medicine providers when an employee has been absent because of an injury or illness for more than 5 consecutive workdays (or an equivalent time period for those individuals on an alternative work schedule);	Yes	<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 ○ UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 3.4
App A.8(d)	(3) Contractors must provide the occupational medicine provider information on, and the opportunity to participate in, worker safety and health team meetings and committees;	Yes	<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 ○ UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 3.1
App A.8(d)	(4) Contractors must provide occupational medicine providers access to the workplace for evaluation of job conditions and issues relating to workers' health.	Yes	<ul style="list-style-type: none"> ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 ○ UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 3.1

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
App A.8(e)	<p>A designated occupational medicine provider must:</p> <p>(1) Plan and implement the occupation medicine services; and</p> <p>(2) Participate in worker protection teams to build and maintain necessary partnerships among workers, their representatives, managers, and safety and health protection specialists in establishing and maintaining a safe and healthful workplace.</p>	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 3.5
App A.8(f)	<p>A record, containing any medical, health history, exposure history, and demographic data collected for the occupational medicine purposes, must be developed and maintained for each employee for whom medical services are provided. All occupational medical records must be maintained in accordance with Executive Order 13335, Incentives for the Use of Health Information Technology.</p> <p>(1) Employee medical, psychological, and employee assistance program (EAP) records must be kept confidential, protected from unauthorized access, and stored under conditions that ensure their long-term preservation. Psychological records must be maintained separately from medical records and in the custody the designated psychologist in accordance with 10 CFR 712.38(b)(2).</p> <p>(2) Access to these records must be provided in accordance with DOE</p>	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 6
App A.8(g)	<p>The occupational medicine services provider must determine the content of the worker health evaluations, which must be conducted under the direction of a licensed physician, in accordance with current sound and acceptable medical practices and all pertinent statutory and regulatory requirements, such as the Americans with Disabilities Act.</p>	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 5.5.2

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	<p>(1) Workers must be informed of the purpose and nature of the medical evaluations and tests offered by the occupational medicine provider.</p> <p>(1)(i) The purpose, nature and results of evaluations and tests must be clearly communicated verbally and in writing to each worker provided testing;</p> <p>(1)(ii) The communication must be documented in the worker's medical record; and</p>		
App A.8(g)	<p>(2) The following health evaluations must be conducted when determined necessary by the occupational medicine provider for providing initial and continuing assessment of employee fitness for duty.</p> <p>(2)(i) At the time of employment entrance or transfer to a job with new functions and hazards, a medical placement evaluation of the individual's general health and physical and psychological capacity to perform work will establish a baseline record of physical condition and assure fitness for duty.</p> <p>(2)(ii) Periodic, hazard-based medical monitoring or qualification-based fitness for duty evaluations required by regulations and standards, or as recommended by the occupational medicine services provider, will be provided on the frequency required.</p> <p>(2)(iii) Diagnostic examinations will evaluate employee's injuries and illnesses to determine work-relatedness, the applicability of medical restrictions, and referral for definitive care, as appropriate.</p> <p>(2)(iv) After a work-related injury or illness or an absence due to any injury or illness lasting 5 or more consecutive workdays (or</p>	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.8 ○ DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 ○ UDS-U-SHP-0501, <i>Occupational Medicine</i>, Section 5.5.1

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	<p>an equivalent time period for those individuals on an alternative work schedule), a return to work evaluation will determine the individual's physical and psychological capacity to perform work and return to duty.</p> <p>(2)(v) At the time of separation from employment, individuals shall be offered a general health evaluation to establish a record of physical condition.</p>		
App A.8(h)	<p>The occupational medicine provider must monitor ill and injured workers to facilitate their rehabilitation and safe return to work and to minimize lost time and its associated costs.</p> <p>(1) The occupational medicine provider must place an individual under medical restrictions when health evaluations indicate that the worker should not perform certain job tasks. The occupational medicine provider must notify the worker and contractor management when employee work restrictions are imposed or removed.</p>	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.5 and 5.5.3
App A8(i)	Occupational medicine provider physician and medical staff must, on a timely basis, communicate results of health evaluations to management and safety and health protection specialists to facilitate the mitigation of worksite hazards.	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 DUF6-UDS-PLN-041, <i>Environmental, Safety, and Health Plan – Construction Phase</i>, Section 5.5 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.5 and 5.5.2.2
App A.8(j)	The occupational medicine provider must include measures to identify and manage the principal preventable causes of premature morbidity and mortality affecting worker health and productivity.	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.5 and 5.5.2.2
App A.8(j)	(1)The contractor must include programs to prevent and manage these causes of morbidity when evaluations demonstrate their cost effectiveness.	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 UDS-U-SHP-0501, <i>Occupational Medicine</i>,

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	demonstrate their cost effectiveness.		Sections 3.1
App A.8(j)	(2) Contractors must make available to the occupational medicine provider appropriate access to information from health, disability, and other insurance plans (de-identified as necessary) in order to facilitate this process.	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.1
App A.8(k)	The occupational medicine services provider must review and approve the medical and behavioral aspects of employee counseling and health promotional programs, including the following types:	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.5, 5.6.3, 5.6.4, 5.6.5
App A.8(k)	(1) Contractor-sponsored or contractor supported EAPs;	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.5 and 5.6.3
App A.8(k)	(2) Contractor-sponsored or contractor supported alcohol and other substance abuse rehabilitation programs; and	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.5 and 5.6.3
App A.8(k)	(3) Contractor-sponsored or contractor supported wellness programs.	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.5 and 5.6.3
App A.8(k)	(4) The occupational medicine services provider must review the medical aspects of immunization programs, blood-borne pathogens programs, and bio-hazardous waste programs to evaluate their conformance to applicable guidelines.	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.5 and 5.6.4
App A.8(k)	(5) The occupational medicine services provider must develop and periodically review medical emergency response procedures included in site emergency and disaster preparedness plans. The medical emergency responses must be integrated with nearby community emergency and disaster plans.	Yes	<ul style="list-style-type: none"> WSHP, Section 10.8 UDS-U-SHP-0501, <i>Occupational Medicine</i>, Sections 3.5 and 5.6.5

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
Appendix A.9	Motor Vehicle Safety		
App A.9(a)	Contractors must implement a motor vehicle safety program to protect the safety and health of all drivers and passengers in Government-owned or -leased motor vehicles and powered industrial equipment (i.e., fork trucks, tractors, platform lift trucks, and other similar specialized equipment powered by an electric motor or an internal combustion engine).	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.9 ○ DUF6-UDS-PLN-041, <i>Environmental Safety and Health Plan for Construction</i>, Section 6.1.8.1 ○ UDS-VRD-106, <i>General Requirements</i>, Section 3.4 ○ UDS-SHP-102, <i>General Requirements</i>, Section 5.3 ○ UDS-GFP-109, <i>Management of Fleet Vehicles</i>
App A.9(b)	The contractor must tailor the motor vehicle safety program to the individual DOE site or facility, based on an analysis of the needs of that particular site or facility.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.9 ○ DUF6-UDS-PLN-041, <i>Environmental Safety and Health Plan for Construction</i>, Section 6.1.8.1 ○ UDS-VRD-106, <i>General Requirements</i>, Section 3.4 ○ UDS-SHP-102, <i>General Requirements</i>, Section 5.3 ○ UDS-GFP-109, <i>Management of Fleet Vehicles</i>
App A.9(c)	<p>The motor vehicle safety program must address, as applicable to the contractor's operations:</p> <p>(1) Minimum licensing requirements (including appropriate testing and medical qualification) for personnel operating motor vehicles and powered industrial equipment;</p> <p>(2) Requirements for the use of seat belts and provision of other safety devices;</p>	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10.9 ○ DUF6-UDS-PLN-041, <i>Environmental Safety and Health Plan for Construction</i>, Section 6.1.8.1 ○ UDS-VRD-106, <i>General Requirements</i>, Section 3.4 ○ UDS-SHP-102, <i>General Requirements</i>, Section 5.3 ○ UDS-GFP-109, <i>Management of Fleet</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
	(3) Training for specialty vehicle operators; (4) Requirements for motor vehicle maintenance and inspection; (5) Uniform traffic and pedestrian control devices and road signs; (6) On-site speed limits and other traffic rules; (7) Awareness campaigns and incentive programs to encourage safe driving; and (8) Enforcement provisions.		<i>Vehicles</i>
Appendix A.10	Electrical Safety		
App A.10	Contractors must implement a comprehensive electrical safety program appropriate for activities at their site. This program must meet the applicable electrical safety code and standards referenced in 851.23.	Yes	<ul style="list-style-type: none"> ○ WSHP, Section 10 ○ DUF6-UDS-PLN-041, Sections 6.1.3, 6.1.4, 6.1.5 ○ UDS-VRD-101 Section 3.1.1.1 ○ UDS-U-SHP-0214, <i>UDS Electrical Safety Program</i> ○ UDS-U-SHP-0215, <i>Working On or Near Energized Electrical Components</i> ○ UDS-C-SHP-0212, <i>Paducah Lockout/Tagout</i> ○ UDS-X-SHP-0214, <i>Portsmouth Lockout/Tagout</i>

Section Number	Section Title/Description of General Requirements	Applicable	UDS Implementing Documents
Appendix A.11	Nanotechnology Safety		
	Reserved	No	NA
Appendix A.12	Workplace Violence Prevention		
	Reserved	No	NA

END OF DOCUMENT